

FLIGHT

The
**AIRCRAFT
ENGINEER
&
AIRSHIPS**

First Aero Weekly in the World.

Founder and Editor : STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list :—

- Aug. 1 Entries close from British Competitors for Schneider Cup
- Aug. 3-14 Rhön Gliding Competition
- Aug. 6 Aerial Derby, Croydon
- Aug. 6-27 French Gliding Competition, near Cherbourg
- Aug. 8-12 F.I.A. Conference, Gothenburg.
- Sept. 23.... Gordon Bennett Balloon Race, Belgium
- Sept. 28 Schneider Cup Seaplane Race at Cowes
- Oct. 8-13 Light Plane and Glider Competitions, Lympe
- Oct. 14 Beaumont Cup Race at Istres, France
- Dec. 1 Entries close for French Aero Engine Competition

1924

- Mar. 1 French Aero Engine Competition.

EDITORIAL COMMENT.



FROM the point of view of technical interest, the International Aero Show which opened at Gothenburg on July 20 is not a disappointment, and for this the German participation is mainly responsible. It must be kept in mind in this connection that at all the so-called International Aero Exhibitions held since the War, 1914-18, Germany has been precluded from taking part. At Gothenburg, for the first time in modern times, Germany has been admitted, and the exhibition has undoubtedly gained thereby. FLIGHT has repeatedly pointed out the folly of barring Germany from showing side by side with France and Great Britain. At Gothenburg she can and does do so, and although not comparable with the British section, which is undoubtedly the mainstay of I.L.U.G., the German machines are entitled to a front place, within the limits imposed upon German constructors.

As regards the machines exhibited, the division between military and commercial types is about even, although until one begins to count the types the military appear to dominate. Actually this is probably because the whole of the British section, seven machines in all, is wholly military in character, and as the British stand is centrally placed it overshadows the commercial and sporting types shown in the two smaller buildings.

From the British point of view the Gothenburg Aero Show will undoubtedly be a success in so far as the very excellent machines exhibited cannot fail to increase British prestige in the Northern countries. Certainly there is nothing in the whole show to compare with the modern British machines, and if any orders are to result there is little doubt that this country will receive its fair share. In the way of competition we have really but two rivals : France and Germany. France is represented by but two machines, which could be called modern military types, and Germany is entirely debarred from producing military machines—in Germany, at any rate. It would, however, be interesting to know what types German constructors are producing in Russia, and, but for the short-sighted policy that has driven

Germany abroad, where no supervision can be maintained, it would have been possible to know exactly what German designers are doing.

The two schools are well represented, the all-metal by the Junkers and Dornier machines, and the all-wood by the Caspars, while the Udet and Stahlwerk machines are representative of the composite type. If the Albatros commercial monoplane arrives, it will probably be found to belong to the all-wood class.

The British machines are mainly of composite construction, as most of our constructors have not yet got to the all-metal stage. The British firms which have particularly devoted their attention to all-metal work, *i.e.*, Short Brothers of Rochester and Boulton and Paul of Norwich, are represented by photographs only. Most of the British machines exhibited are, however, built to a very considerable extent of metal, and the tendency towards the substitution of metal for wood is quite noticeable.

The French section is disappointing, at any rate that part which comprises complete machines. The only type that can be said to represent modern ideas in aerodynamic and structural design is the Breguet "Sesquiplan," which has, however, already been described in *FLIGHT* at the time when it was exhibited in Paris.

Fokker's exhibit is interesting, and the fact that he is not showing experiments but machines which have flown and are being built in considerable quantities entitle the Dutch machines to being treated earnestly. They are not over-original in conception, but are clean, straightforward designs, especially the D.XI, which is a cantilever biplane with a very small bottom wing.

German influence is very noticeable in Swedish design, so much so that in the case of one machine one suspects that it may have been actually built in Germany and put together in Sweden. Incidentally the fact that Swedish machines are now only constructed in government factories—the Thulin private works having closed down with the death of Herr Thulin—provides a parallel to the state of affairs that obtained in this country in the evil days when all British military machines were produced at the Royal Aircraft Factory "by the best brains in the country." It is probably owing to "know-alls" in Swedish government factories that all Swedish machines are fitted with rudders that are several sizes too small for them, and it seems likely that had private enterprise been consulted such shortcomings would not have been permitted to continue, even after several accidents resulting in spins from which the pilots

could not extricate their machines. However, this is a matter that concerns Sweden primarily. At the same time, everybody is concerned to see gallant pilots wasted from causes which should be obvious to anyone having any knowledge of aircraft design, and, moreover, accidents, in whatever place on the globe they may occur, cannot but help do a certain amount of injury to the cause of the air.

How America Does It

What is going to happen with regard to the Schneider Cup Race? The outlook at the moment is certainly not very rosy as far as England's hopes are concerned. At the present time the industry is still suffering from past neglect by the powers that be—or were—and it is scarcely to be expected that manufacturers are able to build machines and compete at their own expense. The only encouragement which the British Government offers is, if it results in a British victory, to take over the winning machine at the "bargain" price of £3,000. This niggardly and parsimonious attitude contrasts strangely with the enterprise of the United States authorities. They are sending over four machines, with four of their best pilots, and, after a period of trial and testing extending over a month or more, they will select from them the team of three to represent the United States.

There are still two months before the actual contest takes place, and we hope that every one who has the least influence will exercise it in the direction of seeing that we are adequately represented in the race, and that the Government grant all possible facilities and encouragement. Surely it should be worth while for the Government to do something substantial to assist manufacturers to engage in upholding the honour of England—especially when trade follows the honour. Twice the Schneider Cup has been brought to England by the enterprise and sporting enthusiasm of British manufacturers, but it is not reasonable to suppose that that state of affairs can continue for ever, especially when the opposition is such as that which has now been organised by the U.S. Government. The first time it was lost mainly through the position of the industry brought about by the utter lack of orders. We hope that before it is too late steps will be taken to ensure that everything possible is done to keep the Schneider Trophy in England now that it is here. Another outstanding precedent should certainly be found in the 100,000 francs offered only last week by the French Government to any of their nationals who bring back the speed and height records to France.



at the

GOTHENBURG INTERNATIONAL AERO EXHIBITION.

"FLIGHT" is on sale at the Gothenburg Aero Exhibition at

"THE DAILY TELEGRAPH" KIOSK, in Main Entrance,



GOTHENBURG

International AERO EXHIBITION

1923

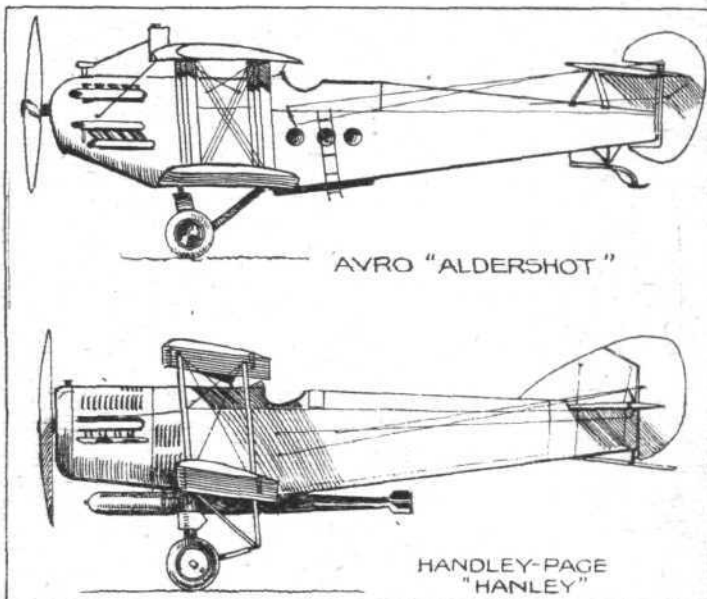


WHAT may be termed the first real International aeronautical exhibition since the War was opened on Friday, July 20, at Gothenburg, the exhibition, which forms one section of the great Swedish Tercentenary Exhibition (I.L.U.G.), which is in operation until the autumn, remaining open until August 12. With so important a nation as Germany absent from previous aero exhibitions at Paris, etc., it is not reasonable to suggest that any exhibition hitherto held since the War can have been truly termed International.

The formal inauguration was carried through by King Gustav of Sweden, who drove from the seaside town of Saero, a favourite resort of the King. It was a fitting accompaniment to King Gustav's arrival for the opening that the British Naval Squadron under Rear-Admiral Gilbert, happened to arrive in the harbour from Stockholm at the same time, and acknowledged the King's presence with a royal salute. After the reception at the entrance of the exhibition grounds, which were very gaily decorated with the flags of all the nations participating, following the singing of the royal anthem an address was delivered by the President of the Swedish Aero Club in which the President commented upon the number of exhibits brought together, which he thought would demonstrate the enormous advances which had been made in aviation. It must be remembered, he pointed out, that aeronautics did not simply mean offensive war; it rather meant a defence in war-time, and more important than anything were the facilities which it offered to transport traffic in times of peace. He regretted the absence of the President of the Exhibition through illness.

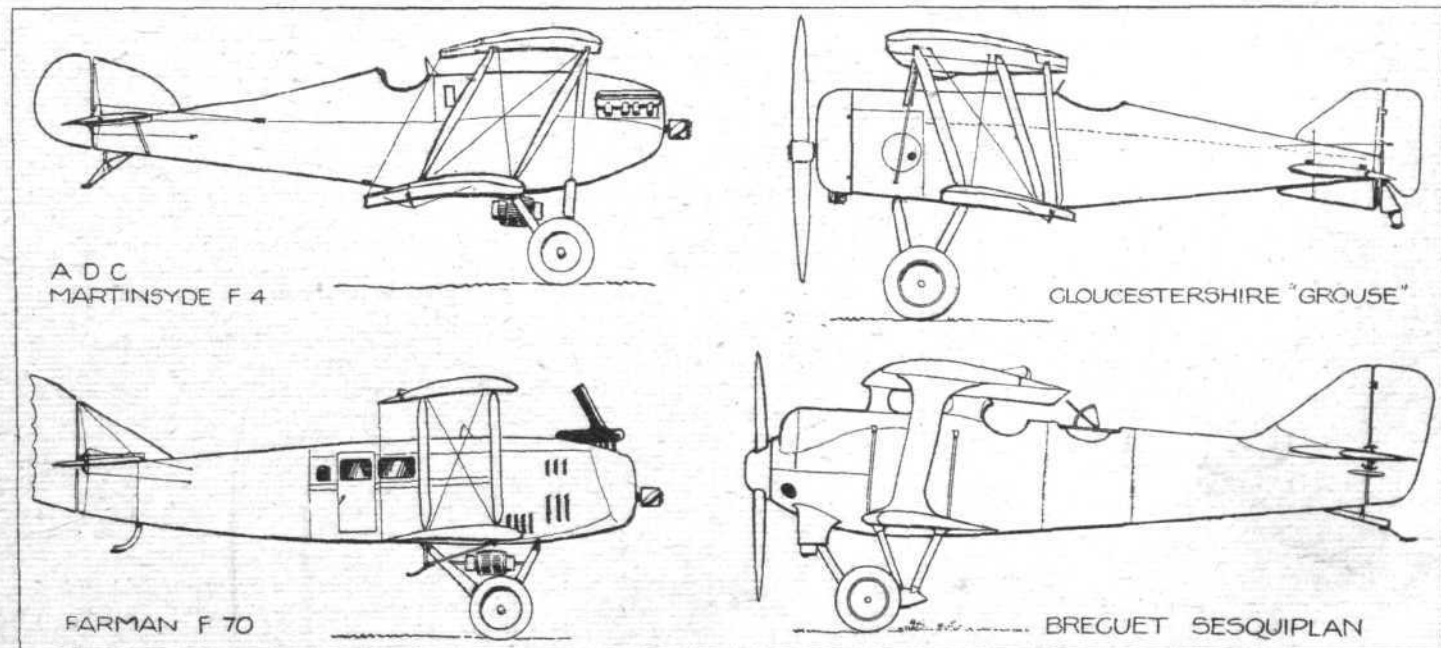
King Gustav, having replied in a few sympathetic words, formally declared the Exhibition open, and then proceeded, with a number of notabilities, to make an inspection of the stands of the different countries. He showed considerable interest in various machines, and particularly was attracted to the British section, in the centre of the pavilion, the huge

Avro "Aldershot" bomber, with the 1,000 h.p. Napier "Cub" engine, being an outstanding feature which nobody could very well miss, especially as it was backed by the



Silhouettes from Gothenburg.

Handley Page machines, with 450 h.p. Napier engines, besides Fairey machines, the Vickers "Viking" amphibian, and the various other British-built craft which were so fully described



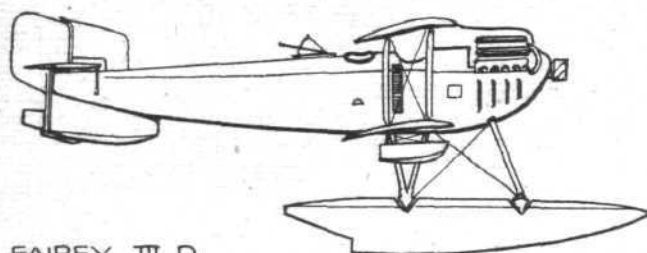
Silhouettes from Gothenburg.

and referred to in the last issue of FLIGHT. Amongst those who accompanied the King in his tour, besides many Swedish eminent men, were Major-General Sir W. Sefton Brancker, Vice-Admiral Mark Kerr, Mr. Alan Cobham, and a number of foreign pilots and representatives of the exhibiting firms.

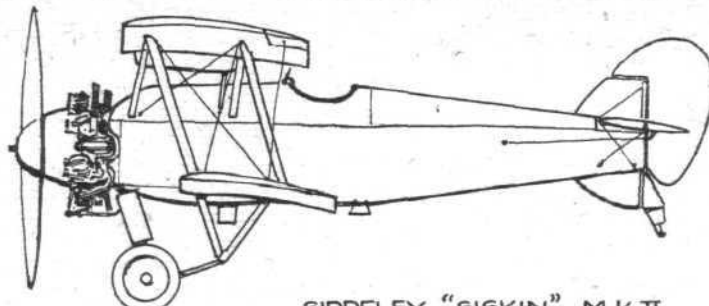
A very favourable impression had been created in the direction of British aviation by the record flight made by Sir William Brancker from Lympne to Gothenburg on the previous Wednesday, when Bremen was reached in 3 hours and 15 minutes (420 miles), giving an average of 126 m.p.h. The remaining 400 miles from Bremen to Gothenburg were covered in 3 hours and 45 minutes, making a total of 7 hours for the 820 miles, this being another splendid record to the credit of Mr. Cobham, the famous De Havilland pilot. This is all to the good, and it should mark the opening of a big campaign for Britain to capture the aeronautical markets of Scandinavia and other great progressive communities. It only

of neutralising this action, after the opening of the show, it transpired that the French Government had taken steps which in a great measure countered this prohibition, by deciding to send four military aeroplanes to take part in the race, which, under the Treaty of Versailles, are entitled to fly over German territory, thus ensuring the French being represented.

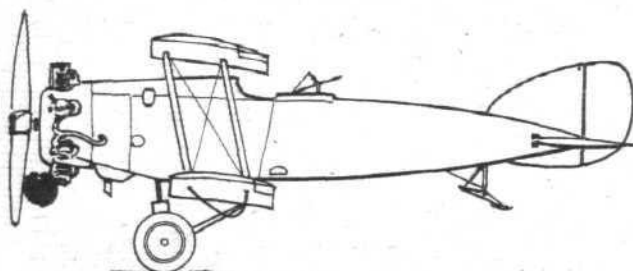
Both French and British machines are so very well known to constructors and to our readers generally that we do not propose to do a stand-to-stand report, as is most convenient at the Paris Show, but rather our scheme is to give a general review in this issue, together with silhouettes of the machines on view (35), with general remarks regarding each country's exhibit. Two of the scheduled machines were missing at the time of our going to press, but these we hope to include later. In subsequent issues we propose to give detailed descriptions, with photos, or perspective sketches, and detail sketches of interesting machines.



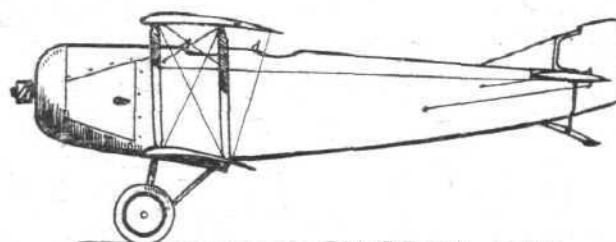
FAIREY III D.



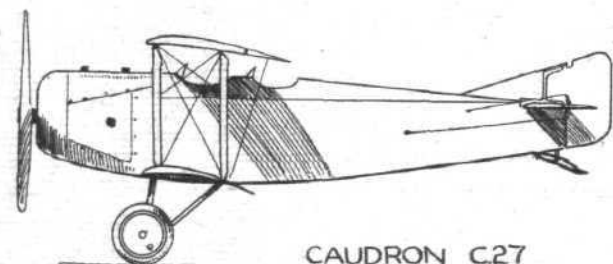
SIDDELEY "SISKIN" M.K.II



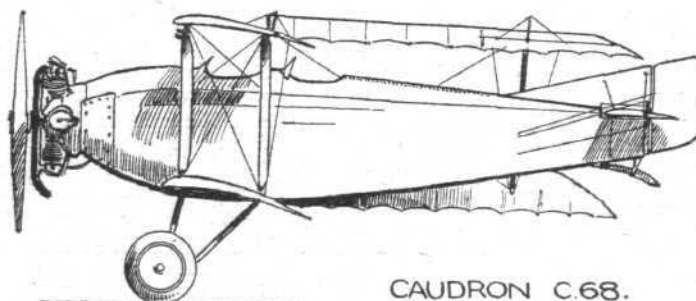
BRISTOL FIGHTER



CAUDRON C.60.



CAUDRON C.27



CAUDRON C.68.

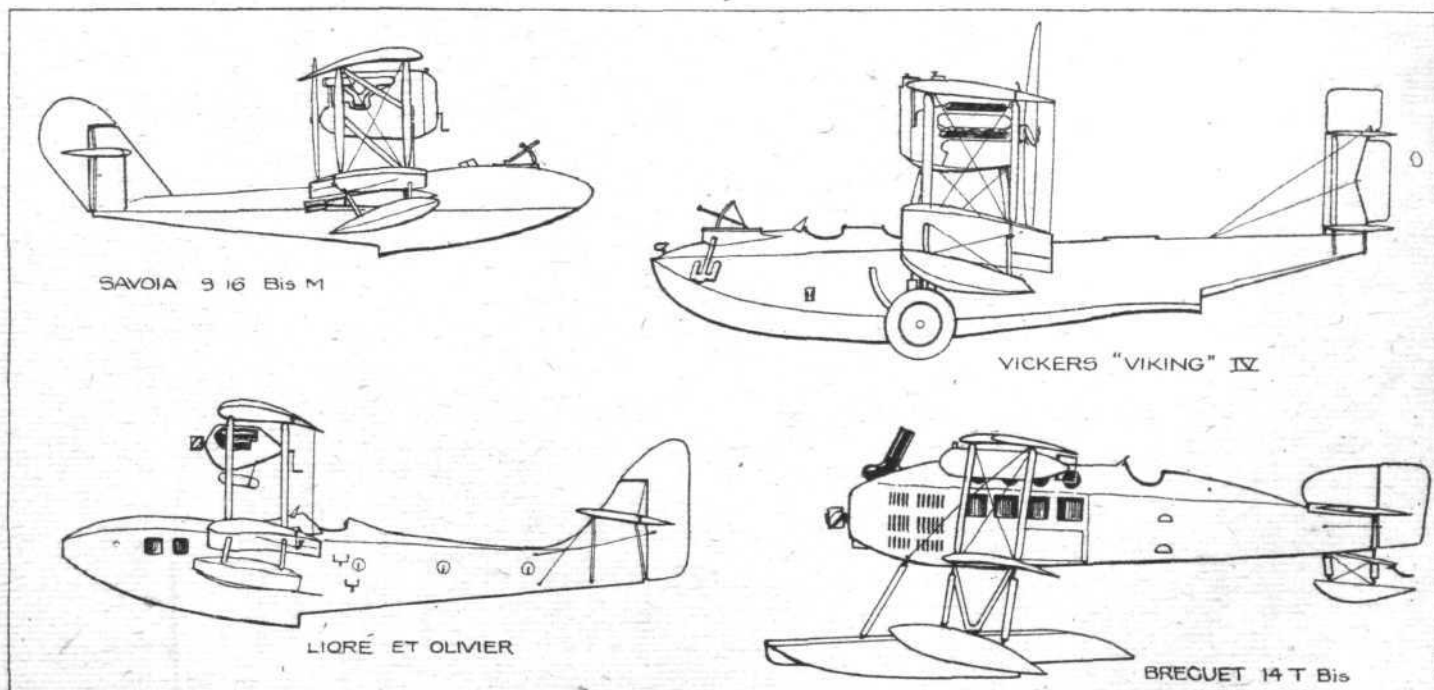
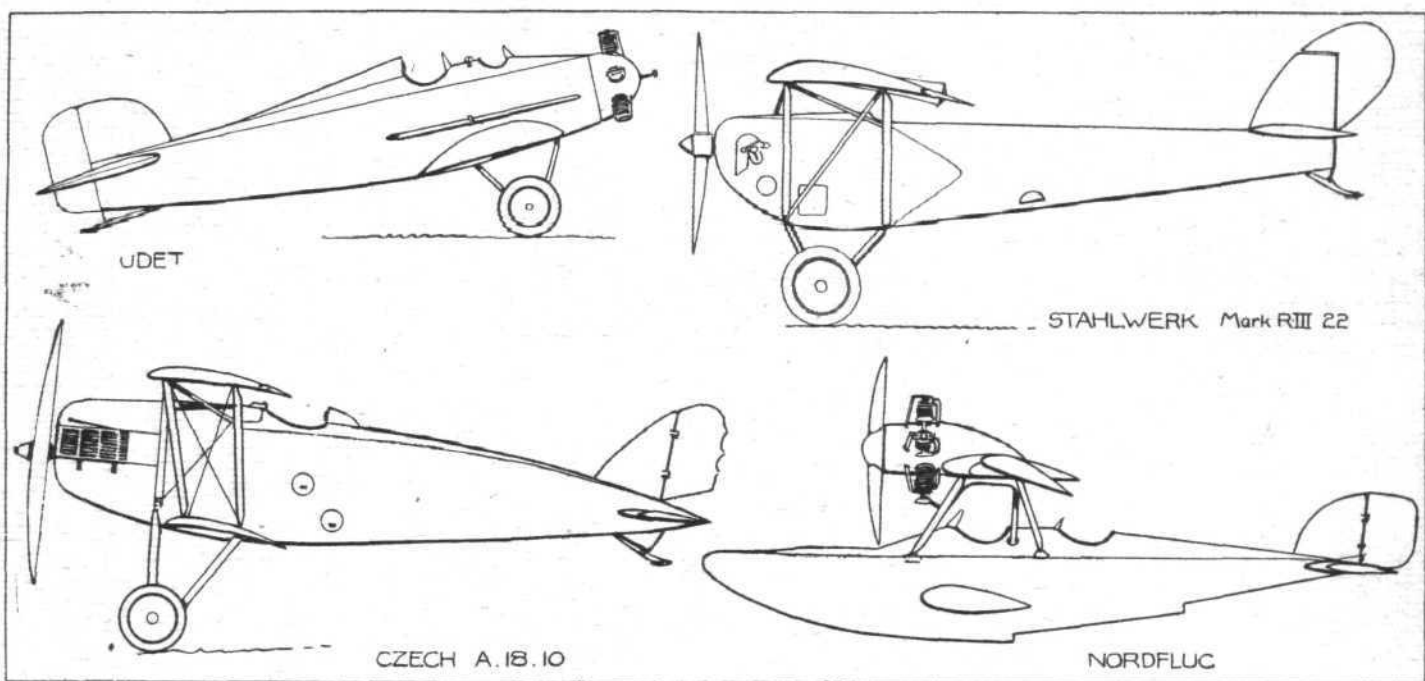
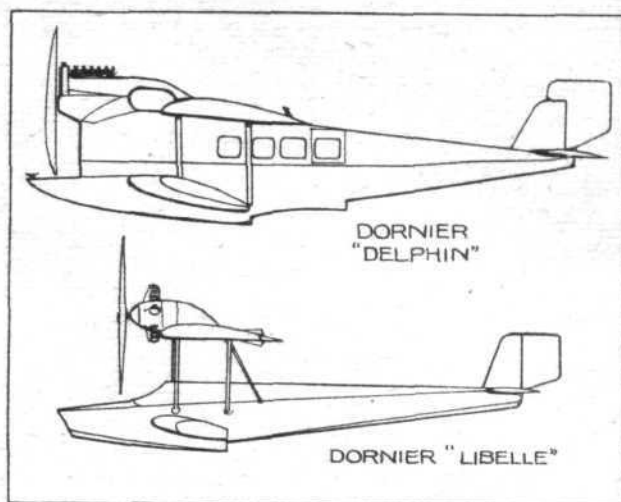
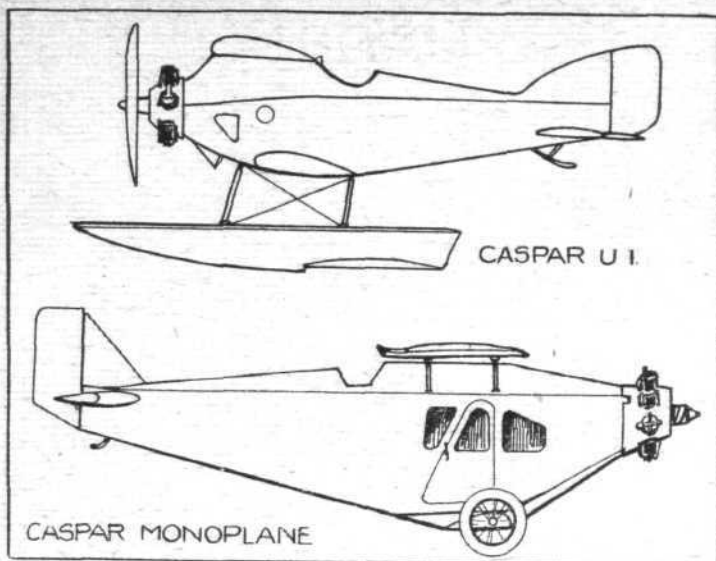
Silhouettes from Gothenburg.

requires the application—the trail is already laid, and in many parts of the world, especially Scandinavia, the governments and peoples are anxious to make a start. There is great prospective business in this show—more so, in our opinion, than any hitherto held, and we shall look to our side to see that the promising field is not neglected.

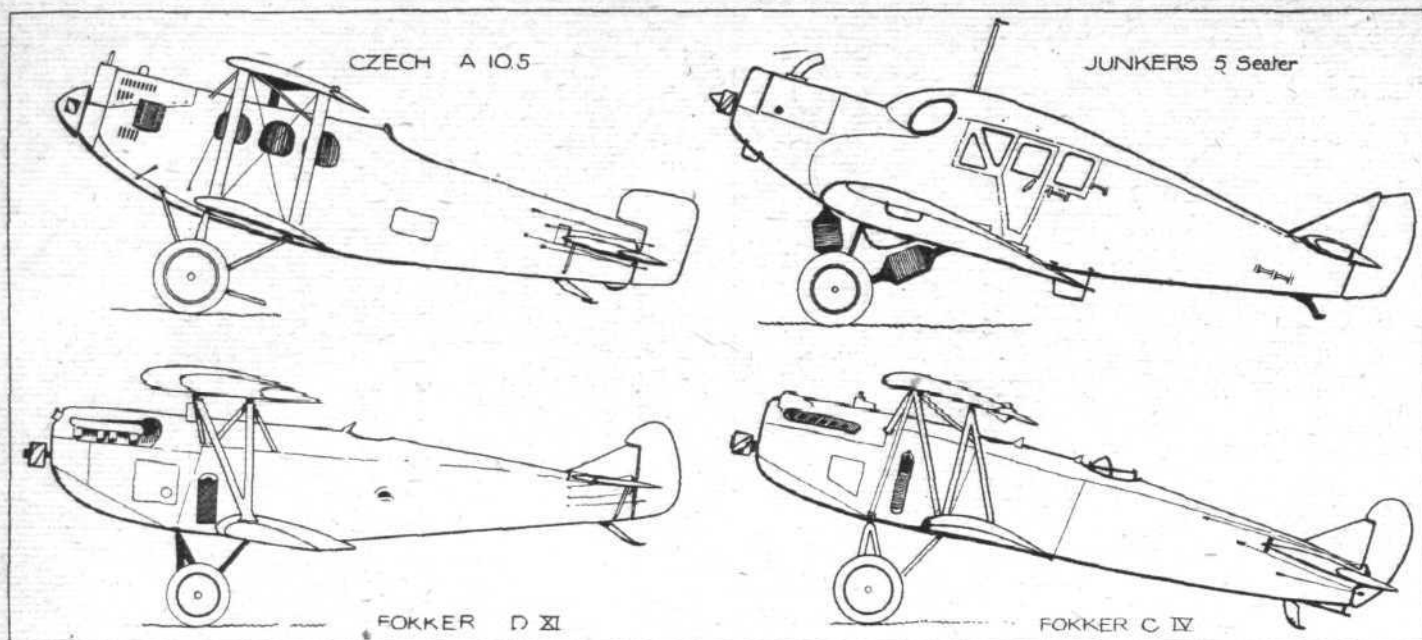
On the whole, the show looks like being a very good one, and will no doubt bring a large number of visitors early next month, when an Air Conference is being held, in connection with which Sir Samuel Hoare and Lady Maud Hoare are paying an official visit to the Exhibition, travelling there by air, starting on August 3.

The British section is distinctly the "hub" of the show, placed as it is in the centre of the pavilion, making the rest of the countries look almost like side-shows. Germany makes quite a brave exhibit, and, as already mentioned, their presence at the Exhibition has created a very great amount of interest, contrasting sharply with their exclusion from Paris, etc., in the past. It is all the more regrettable, therefore, that such mistaken action was recently taken by Germany, in refusing to allow French and Belgian machines to fly over their territory in the Amsterdam-Gothenburg race. By way

[In regard to the above introductory matter, we are afraid that our scheme for the current week has to be subordinated to the methods of the Post Office, either Swedish or our own, in regard to the delivery of letters to us. We take every precaution to see that our reports from abroad shall run no risk of loss or delay if such a thing be possible, but it is not within human powers to always circumvent the eccentricities of Post Office methods. On Tuesday midday we received a registered and expressed letter from our representative at Gothenburg, and therein found that that was a *continuing* portion of his report, the intervening matter between the opening and the report which we publish hereunder, having so far not arrived at our office, although, according to his advice, it was posted on Friday, July 20, duly registered and expressed. This we are till waiting for, and shall hope, in any case to publish the missing matter in next week's issue, asking our readers to bear with us under the circumstances and to treat the two portions in their reverse order, as our opening report. Fortunately, our silhouettes, etc., were despatched under separate covers, and reached us in due course, so that in a measure by a study of these, all of which are reproduced in the current issue, our readers can obtain a tabloid view of the



Silhouettes from Gothenburg.



Silhouettes from Gothenburg.

machines staged, pending the publication next week of the "missing link."—ED.]

The later portion of the report received is as follows:—

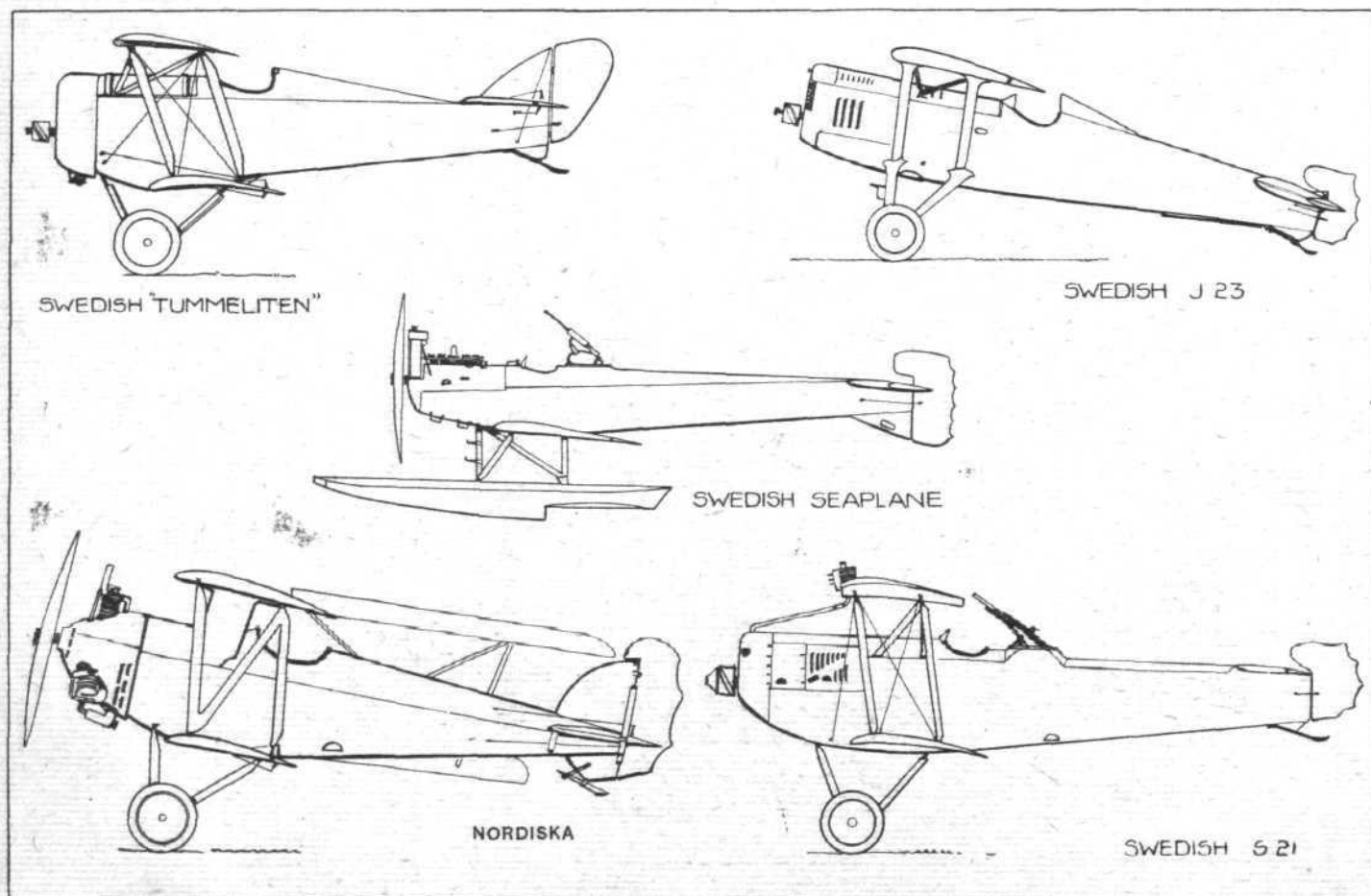
The Udet Flugzeugbau show a Bäumer aero similar to that described and illustrated in FLIGHT recently. The machine is a "Tief-decker," or monoplane, with the wing placed low on the fuselage, and seats two, in separate cockpits one behind the other. The monoplane wing is in one piece, and the two box-section spars rest in notches cut in the fuselage. The engine is the popular Siemens radial, and the makers of the Udet monoplane have fitted it with a neat exhaust collector ring of small diameter, which surrounds the nose of the crank-case, and from which a single exhaust pipe runs aft on the starboard side. In the other German machines fitted with the Siemens engine the exhaust pipes are quite short, and must result in "dirty" machines (and crew).

The Nordflugwerke exhibit a small two-seater flying boat,

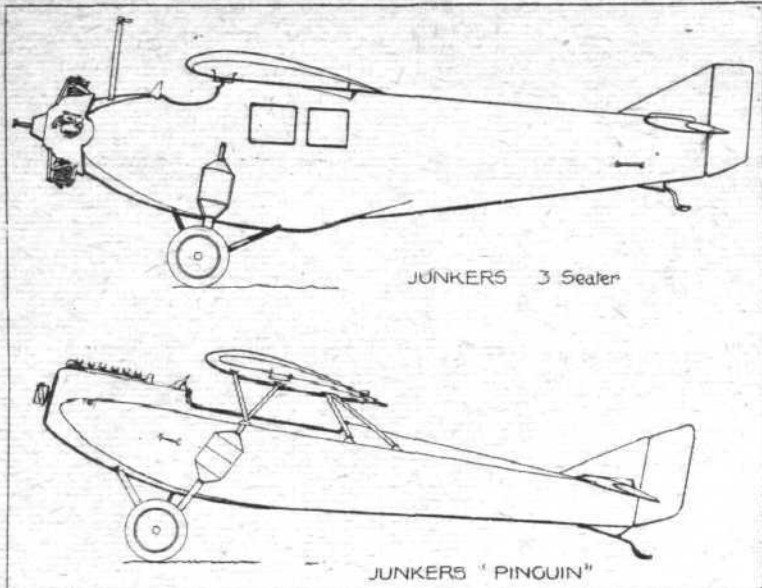
intended for school work and for touring. In a general way this machine resembles the Dornier "Libelle," but the boat hull differs from that machine in having two steps. As in the "Libelle," the engine is a Siemens. The Nordflug machine is built entirely of wood, and the finish is not very good, especially for a machine intended to be exhibited at an international aero show. The wing roots on the boat hull are much shorter than those of the "Libelle," and their effectiveness in preventing the machine from heeling over when on the water may be doubted.

Sweden

FOUR machines are staged on the stand reserved for Sweden. One of these is built by the Svenska Marinens Flygväsende, and the other three by the Swedish Army Aircraft Factory. A fifth machine displaying the beautiful Swedish flag on its rudder is shown on a separate stand, but seems to be nobody's darling, as we could find nobody on the stand and no information was available, beyond a small placard tacked to the nose



Silhouettes from Gothenburg.



Silhouettes from Gothenburg.

of the fuselage and carrying the legend : " Nordiska Phoenix Abol., Gothenburg."

The machine stated to be exhibited by the Swedish Navy shows a strong family resemblance to the Hansa-Brandenburg machines, and it seems likely that it was, at any rate partly, built in Germany. It is a monoplane with the wing low down, and two long stepped floats.

Of the three machines shown by the Swedish Army, one is a small training machine, which has been nicknamed the

becomes triangular. The engine is a 240 h.p. German vertical engine, probably a Maybach. This machine is known as the S.21, which indicates that it is a two-year-old.

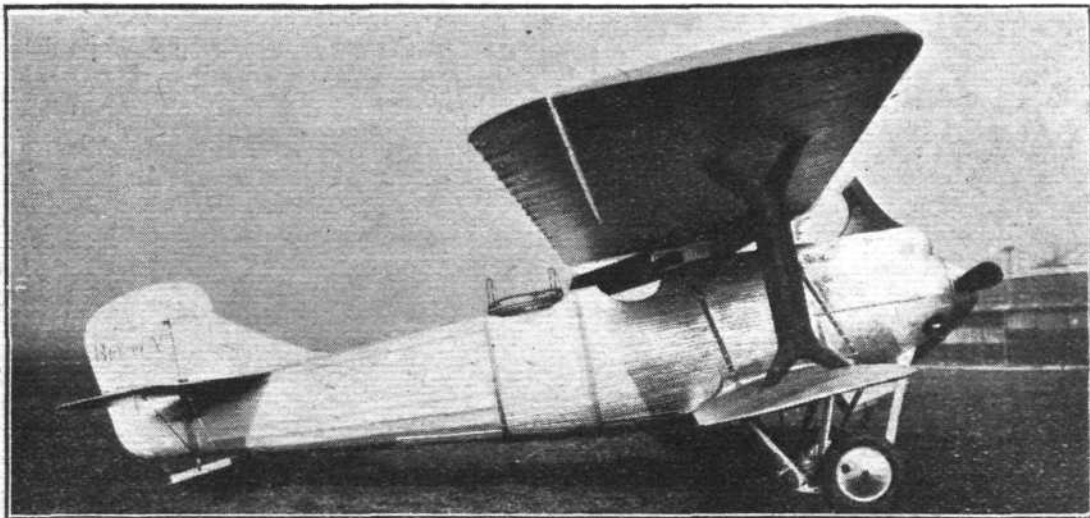
The most interesting machine on the Swedish stand is, perhaps, the type J.23, which is a Jagare, or "chaser." It is a this year's model, and is credited with a speed of 220 km. per hour (136 m.p.h.) at 1,000 metres. The J.23 is a parasol, strut-braced monoplane, in which the wing becomes thin in the centre, as in our modern Bristol and Hawker monoplanes. The engine is a 185 h.p. B.M.W., and if the speed figure given is correct, the designers have cause to be proud of their achievement : 136 m.p.h. on an engine of but 185 h.p. is a fine performance.

The machine bearing the Nordiska Phoenix mark is a small biplane, with unusual wing bracing. There is one pair of interplane struts on each side, of N-formation, and the bracing is in the form of tubes, of which the anti-lift tube runs right through, while the lift tube is divided where it crosses the former. These tubes are placed between the spars, and the centre-section tubes from the fuselage are very deep from front to back. The wings are designed to fold back, and the machine is actually shown with the starboard wings folded. The engine is a three-cylinder Bristol "Lucifer" of 100 h.p. Later we hope to be able to obtain further particulars.

It is a very curious fact that on all the Swedish machines which we have seen so far the rudder appears to be much too small. That it is so in reality seems to be borne out by a report that the Swedish military machines have caused several accidents owing to getting into spins from which the pilots could not extricate them. It seems extraordinary that this defect in design should have been allowed to go on, as it is obvious from a mere inspection, without going into calculations, that the rudder and fin areas are wholly inadequate.

Holland

FOKKER, or more correctly the Nederlandsche Vliegtuigen Fabriek of Amsterdam, is represented by two complete



The Breguet type XIX A.2 Sesquiplan, with 450 h.p. Renault. A military machine of metal construction.

"Tummeliten" (Hop-o'-my-thumb). It is an ordinary small biplane, with one pair of struts and stranded cable bracing. The engine is a Thulin-Rhone.

The second Army machine is a two-seater reconnaissance type, with the usual two pairs of struts on each side. The fuselage is rectangular in front, but the lower longerons converge aft of the gunner's cockpit, where the section

machines and the Duralumin hull of the Fokker amphibian flying boat. The latter looks a very well-finished job, and compares not unfavourably with the German all-metal machines built by firms with much longer experience of metal construction. This refers to metal work on rolled and drawn sections and to sheet covering, as Fokker has, of course, for very many years been using welded tubular construction in

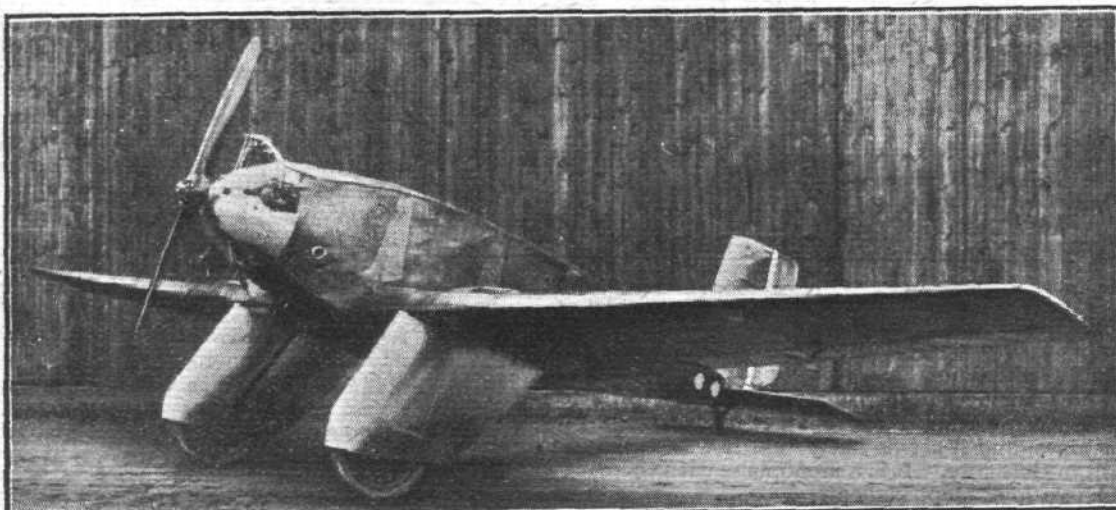
The Breguet limousine XIV T.B. "Ambulance."





The Albatros "L.58" cabin monoplane: A commercial machine with cantilever wings and a 260 h.p. Maybach M.B. IV, or 260 h.p. Rolls-Royce "Falcon," engine.

■ ■ ■ ■ ■ ■ ■ ■ ■ ■
 ■
 ■
 ■ The Albatros
 ■ type 59/60
 ■ "sport" mono-
 ■ plane — complete
 ■ with trousers.
 ■ It has cantilever
 ■ wings, and a
 ■ 50-60 h.p. radial
 ■ air-cooled engine.
 ■
 ■ ■ ■ ■ ■ ■ ■ ■ ■ ■

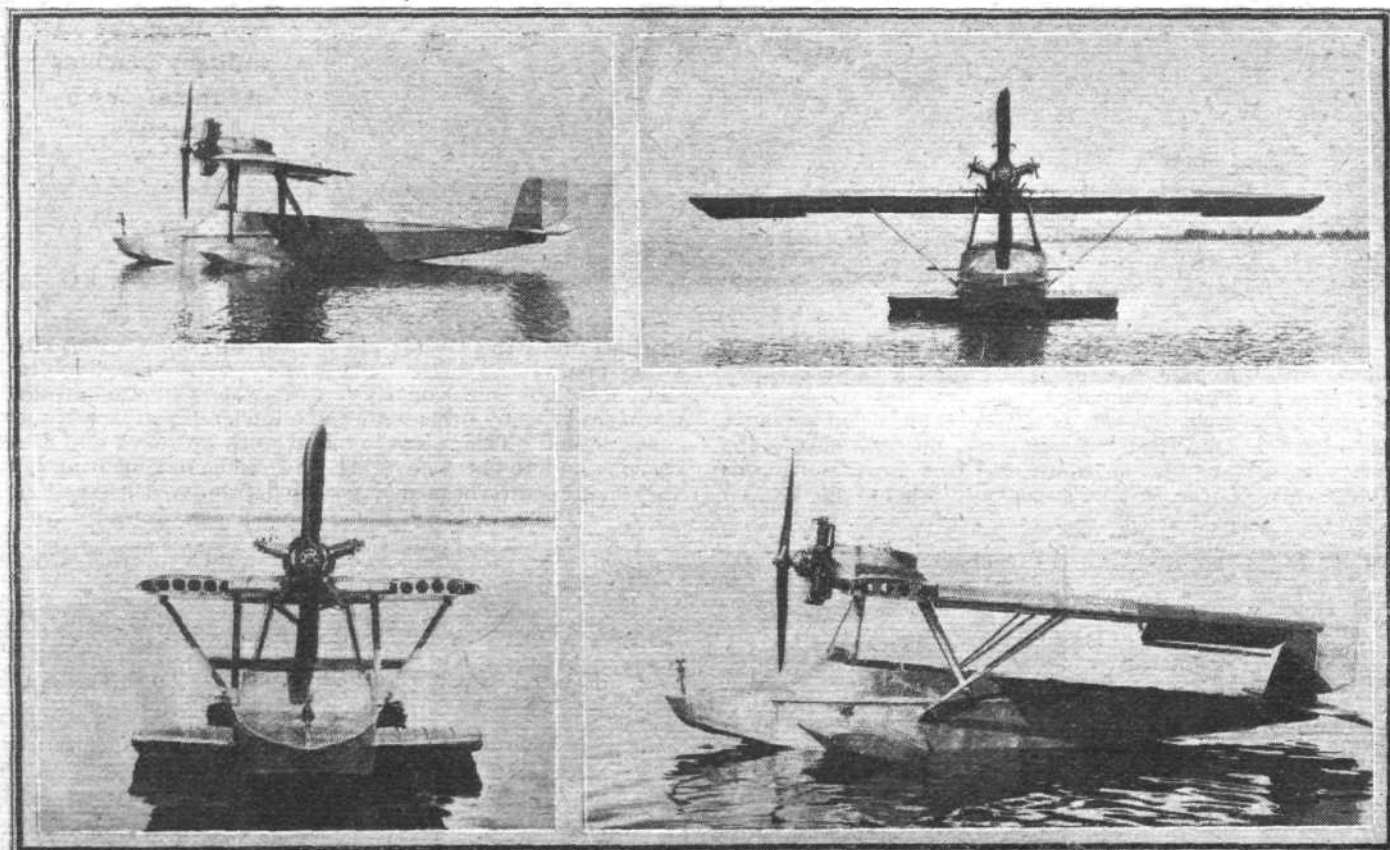


his fuselages. As the amphibian flying boat has been described and illustrated in *FLIGHT*, we need not refer to it in detail here.

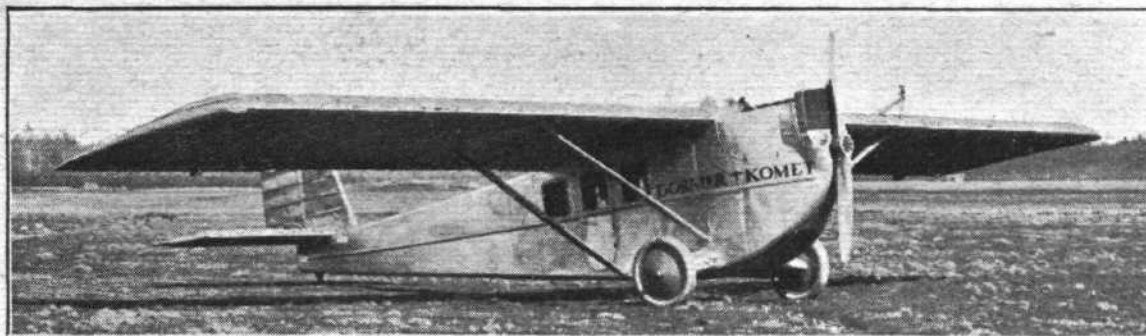
Of the two land machines shown on the Fokker stand, one is a two-seater fighter of fairly orthodox design. This machine is known as the C.IV, and can be fitted with either Napier "Lion" or with a Liberty engine. The C.IV is built entirely of steel, with the exception of the covering, which is fabric. Although a fairly large machine, the C.IV has but one pair of

struts on each side. It is similar to the famous Fokker D.VII, inasmuch as it is a cantilever biplane, the interplane struts serving mainly to resist torsion of the wings. With Napier "Lion" engine the speed is 245 km. (152 m.p.h.), and with Liberty motor 145 m.p.h. It may be recalled that this type was awarded first prize at the international competition at Madrid in February, and we believe that as a result the Spanish Government has ordered a considerable number.

The Fokker D.XI is a single-seater fighter, and can be fitted

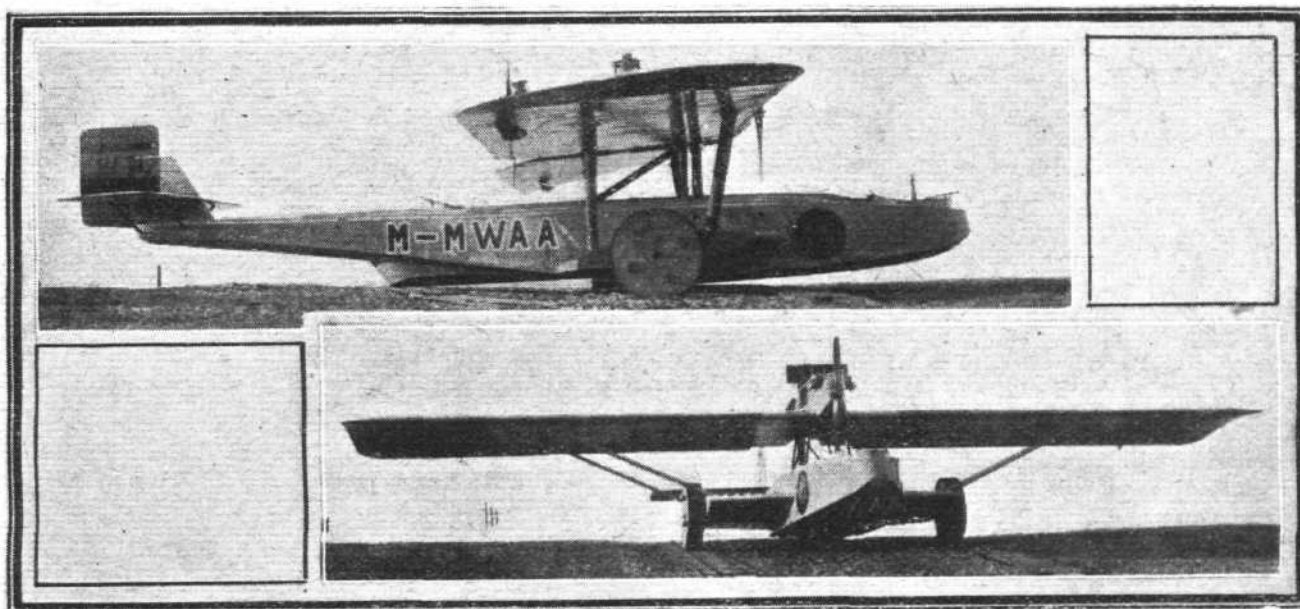
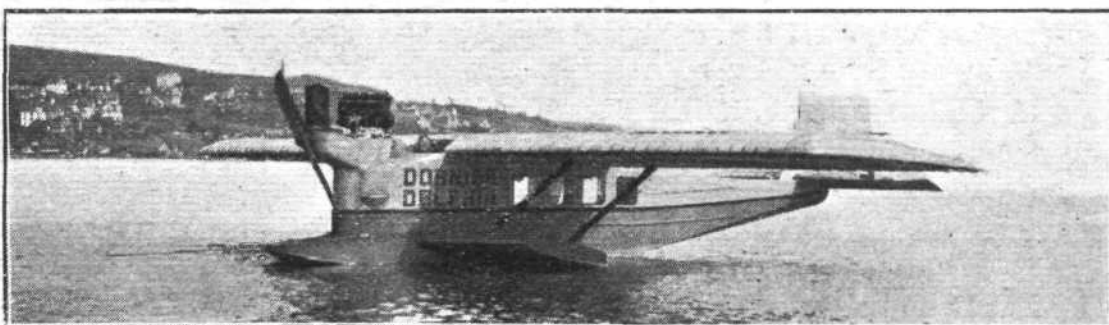


Four views of the Dornier "Dragonfly" flying boat, of metal construction, fitted with a 50-60 h.p. Siemens engine.



The Dornier "Komet," a medium-powered commercial limousine monoplane, mainly of metal construction.

The Dornier "Delphin," a monoplane "cabin" flying boat of somewhat unusual design.

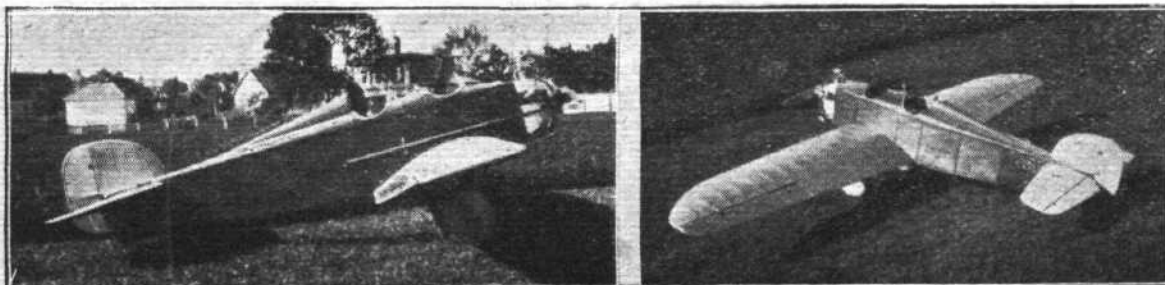


Two views of the Dornier "Wall" monoplane flying boat, with two engines, arranged in tandem. Note, the "wheels" are not permanent fitments.

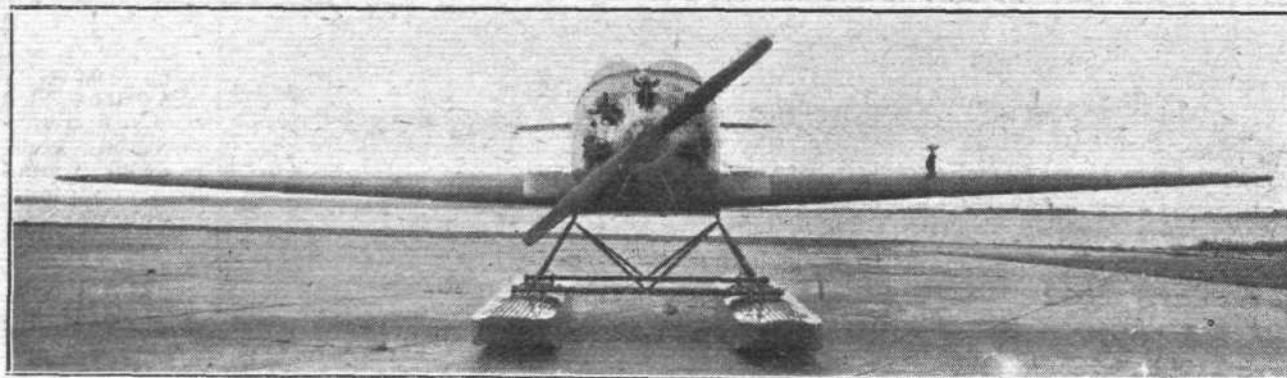
with either 300 h.p. Hispano or 375 h.p. Curtiss. It is a one-and-a-half plane, inasmuch as the lower wing is quite small, and connected to the upper by one pair of V-struts on each side. The wings are of the cantilever type, and are covered with plywood as in the Fokker commercial monoplanes. The armament consists of two machine guns, with the usual interrupter gear. The maximum speed is stated to be 250 km. (155 m.p.h.), and the climb to 5,000 m. (16,400 ft.) takes 12 mins.

Italy

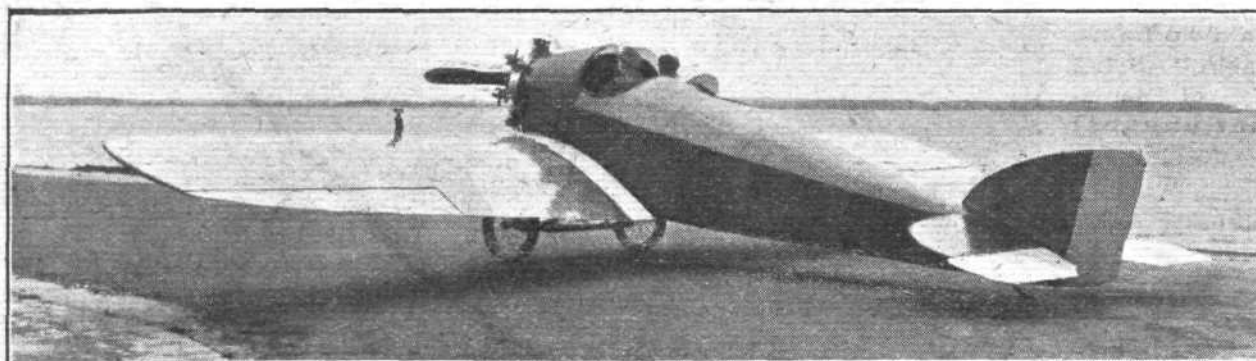
At present Italy is represented by but one machine, a Savoia S.16 bis M. flying boat, with Fiat engine. Some Gabardini machines are expected, but at the moment of writing have not arrived. The S.16 bis M. is of typical Savoia design, but the armament is somewhat unusual in that a gun ring is mounted in the forward cockpit near the bows, while two large bombs are slung, one on each side, under the lower wing where this joins the boat. The bomb



Two views of the Udet 50-60 h.p. sport monoplane. The side view on the left gives a good idea of the business-like lines of this little machine.



The Heinkel H.E.3 cantilever monoplane (80-110 h.p. Siemens-Sternmotor), with floats.



The Heinkel H.E.3 fitted with wheel undercarriage for land work.

release is of very simple design, consisting of a couple of "meat skewers" passing through the brackets laterally. When the "skewers" are pulled into the hull the bombs are free to drop.

Czechoslovakia

ONE commercial and one military machine are exhibited by Czechoslovakia. The former is designed and built by the aero works of Praha, and is known as the A.10 5. The latter is a product of the Army Factory, and is a single-seater fighter known as the A.18 10. Both have water-cooled engines. The commercial machine is an ordinary tractor type with enclosed cabin. It is said to have been designed by a former designer of the Gotha works, and certainly has a German look about

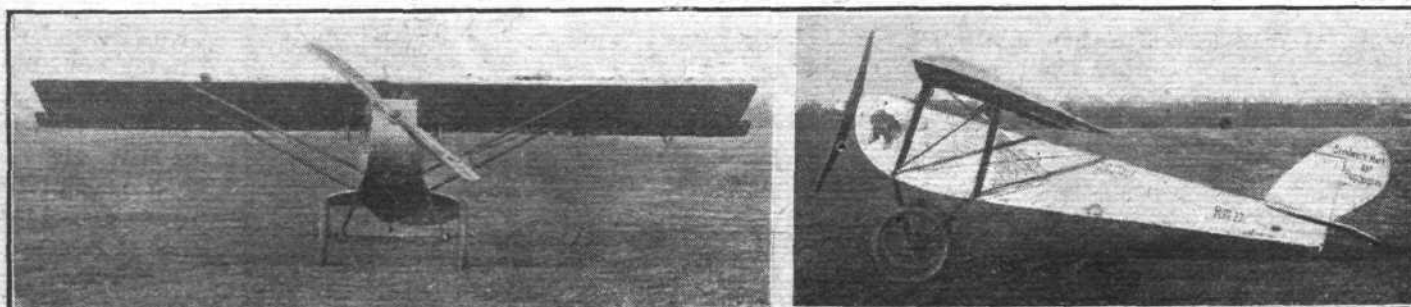
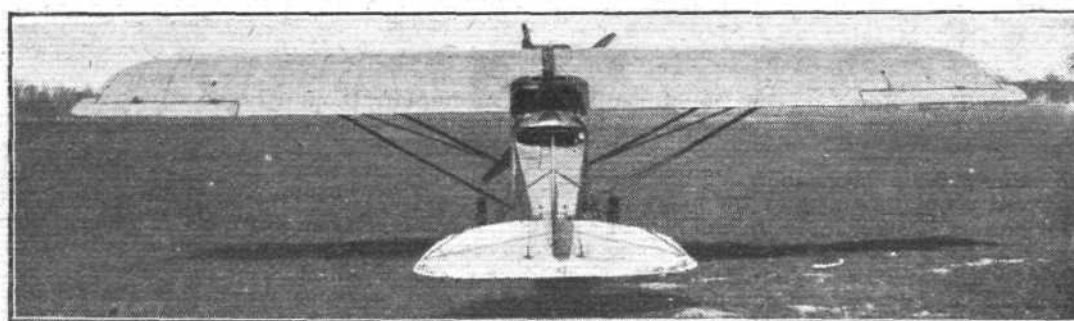
it. A somewhat similar machine was described in FLIGHT a couple of years ago or so.

The single-seater fighter is of orthodox design, and does not appear to possess any unusual features. Particulars relating to performance are not available at the moment.

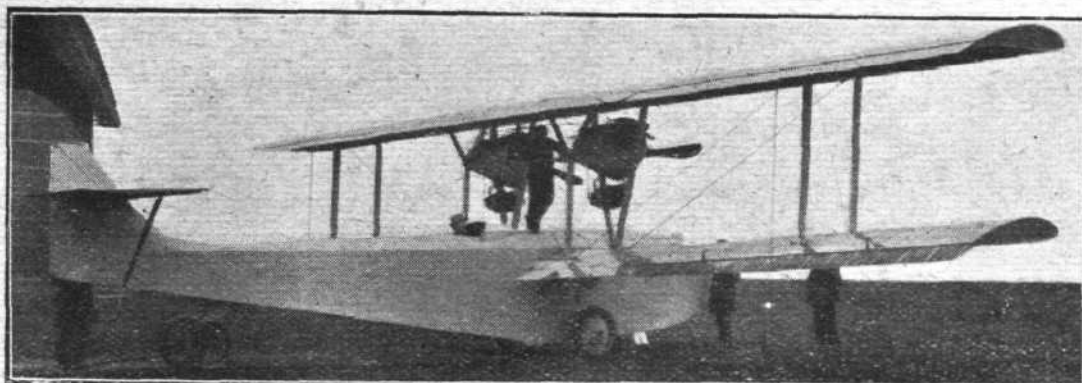
Items

OUR ubiquitous Director of Civil Aviation, General Sir Sefton Brancker, was one of the first to arrive at I.L.U.G., where he was busy examining the machines on the day before the opening of the exhibition. General Brancker, who still walks with a limp, flew over as passenger with Alan Cobham in a D.H.9. The trip was made in one day, and in a total

□ □ □ □ □ □ □ □
□
□
□ The Stahlwerk
□ R. IV monoplane
□ —a larger edition
□ of the R. III,
□ fitted with a
□ 55 h.p. engine.
□
□
□ □ □ □ □ □ □ □



Front and side views of the Stahlwerk R. III sport monoplane, fitted with a two-cylinder 30-40 h.p. engine.



The Liore and Olivier H.13. twin-engine flying boat, which has been doing good service on certain of the French commercial air routes.

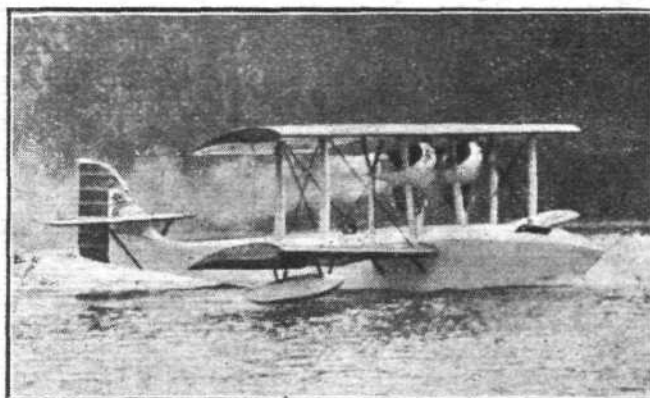
flying time of 7 hours, with but one stop—at Bremen—to fill up with petrol. Considering that the normal journey takes at least 36 hours, there is much to be said for travelling by air.

We understand that Mr. Cobham will return to England with General Brancker, and will then fly the new de Havilland four-seater over for the flying competitions in August.

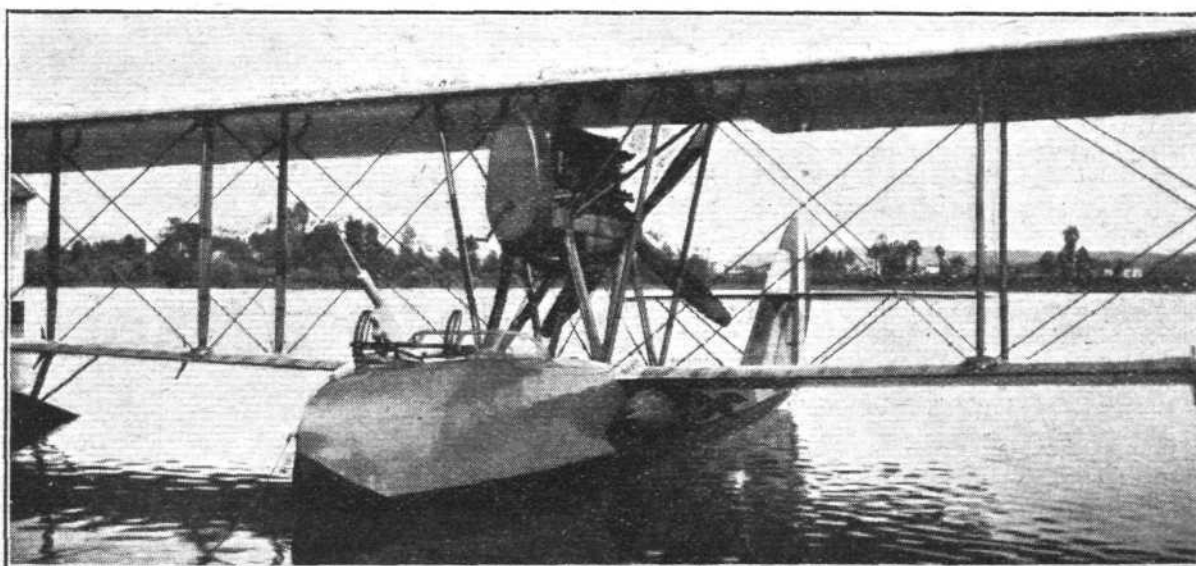
In spite of a strong wind, Mr. Bramson, Continental manager of the Savage Sky Writing Company, on July 19 wrote the word "Capstan" in the sky above Gothenburg. People in the streets and exhibition grounds watched with the greatest interest. Later Mr. Bramson will, as soon as the weather permits, write "I.L.U.G."

We understand that the new Supermarine commercial flying boat the "Sea Eagle" will be flown over for the Gothenburg competitions in August.

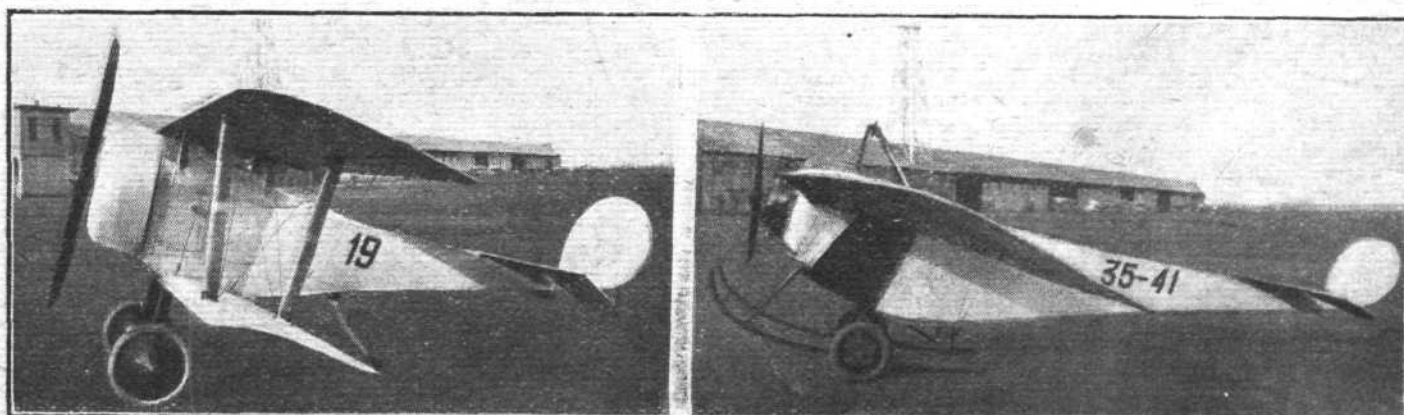
Up to the present, it is stated, 18 machines have been entered for the arrival flight from Rotterdam to Gothenburg



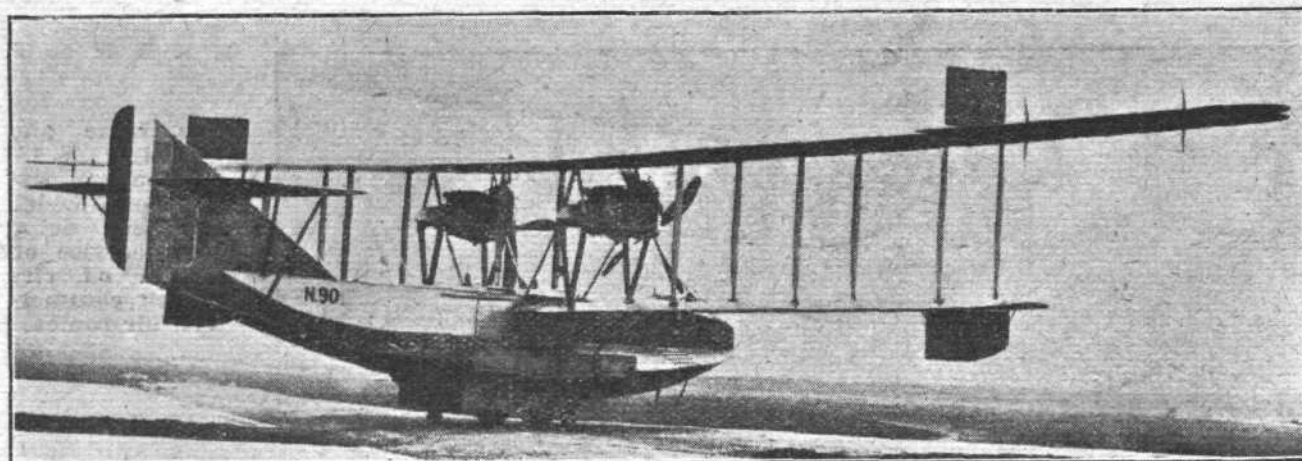
The Liore and Olivier H.13. flying boat on the water.



The S.I.A.I. (Savoia) S.16 Bis.M. flying boat, with 300 h.p. Fiat engine, one of many successful types of flying boats turned out by this Italian firm.



TWO ITALIAN GABARDINI MACHINES: On the left, the 110 h.p. fighter biplane, and on the right the 35 h.p. school monoplane.



One of the three F.5 flying boats, fitted with Rolls-Royce "Eagle" engines, representing the British Air Ministry at the Gothenburg International Aero Exhibition. These craft will be flown over to Gothenburg, and will give flying demonstrations on behalf of Great Britain during the Exhibition.

on August 4. For the commercial flights over the route Gothenburg-Copenhagen-Malmö-Gothenburg, August 7-11, seven machines have been entered. Full particulars of the various flying competitions were published in *FLIGHT* of June 14, 1923.

WITHIN the next few days it has been arranged for three R.A.F. "F.5" flying boats fitted with twin Rolls-Royce engines to fly over to Sweden, via Holland, from the Isle of Grain. This will give the Dutch authorities a chance to see the "F.5's" work prior to the second stage of their journey to Esbjerg, Denmark, whence they will continue on to Gothenburg, there to give demonstrations of air-work.

The Aircraft Disposal Company at Gothenburg

It is to be regretted that the name of the Aircraft Disposal Company, of Kingsway, London, was omitted from the review of exhibitors in the British section of the Gothenburg Exhibition which appeared in our last issue. After going

to press we learnt that, although they were not down on the official list of British exhibitors, they were one of the earliest to book a space in the Exhibition—in fact their exhibit was completely *in situ* before any of the others, who were delayed by the dock strike.

As may be expected, the A.D.C. exhibit is a very representative one, for, as is well known, their "stock" embraces practically everything aviatric, from split-pins up to complete machines. Of the latter, one of the popular Martinsyde F.4 machines is shown, and forms an excellent example of the fine finish, equipment, etc., given to the machines supplied by the A.D.C.

From the large variety of engines handled by the A.D.C. four types are on view, as follows: The well-known 230 h.p. Siddeley "Puma," the 300 h.p. Wolseley "Viper," the 300 h.p. Hispano-Suiza, and the 230 h.p. B.R.2 air-cooled rotary.

They also have a representative selection of component parts, instruments, etc. The A.D.C. stand is very favourably situated in a prominent portion of the exhibition, adjoining that of the other British exhibits.

LONDON TERMINAL AERODROME

Monday evening, July 23, 1923

PASSENGER traffic still continues to maintain the high level which has been set during the summer. The Handley Page Transport alone have, so far, this month carried 898 passengers between London and Paris, and during the past week-end the rush for seats has been greater than ever. In fact, it is the usual thing now for practically every machine on all services to be fully booked up two or three days ahead. Today (Monday) four Handley Pages were outward bound for Paris, all fully laden.

One of the outstanding features of this season's passenger traffic has been the number of parties, chiefly American tourists, who have booked up complete machines to carry them to the continent. The latest example of this was when a party of ten American women tourists, together with one youth, and a large quantity of luggage, booked up two Daimler 34's in order to fly to Amsterdam on Saturday morning. The machines got away within a minute or two of each other, and the party, which was split up between the two machines, were greatly excited as to who should arrive first.

Mr. Perry, one of the Disposal Company's pilots, has during the week made his scheduled number of landings on a D.H.34, and qualified to have this machine placed on his flying certificate, and is now flying as spare pilot for the Daimler Airway in addition to his duties with the Disposal Company. Mr. Courtney is also acting as pilot for Daimlers, in the intervals from his test work. During the week-end the Daimler Airway entertained its regular pilots to a two days' trip in one of the Daimler motor-yachts, the party departing

from Southampton and having a very enjoyable time. Mr. H. S. Robertson, who is also one of the Daimler pilots, is the latest member of the aerodrome staff to join the ranks of the Benedicts.

Progress with the Air-Goods Traffic

THE Instone Air-line have, I understand, got another large contract for freight between London and Cologne. As far as can at present be ascertained, this is for approximately 50 tons of tobacco to be flown from London to Cologne, while, as a return load, they have managed to get a contract for 50 tons of dye-ware. The Vickers Vimy, "City of London," which has already seen so much service, is to be converted into a "freighter" to deal with this goods traffic.

With the idea of popularising still more the aerodrome as one of the sights of London, the Trust Houses arranged for a party of M.P.s and pressmen to visit the aerodrome today (Monday). They had lunch in the new Trust House tea-rooms, and then made a tour of inspection of the aerodrome. I understand, also, that arrangements are nearing completion with Messrs. Tillings for a service of 'buses from Charing Cross to the aerodrome.

Monday night.—Two quite interesting pieces of news are worthy of eleventh-hour mention. Capt. Barnard, flying to Cologne today, broke the existing record by doing the journey in 2 hours 25 mins., while Colonel Edwards, at the Trust House luncheon before-mentioned, stated that soon the Handley Page service will be extended to Basle and Zurich, while that of the Instone air-line will run on to Prague.

General Brancker Flies to Gothenburg

ON Wednesday, the 18th inst., Major-Gen. Sir Sefton Brancker, piloted by Alan J. Cobham, flew over to Gothenburg in order to be present at the official opening of the Aero Exhibition the following Friday. Leaving Lympne at 7.30 a.m., they passed over Holland at about 5,000 ft., then,

meeting rain and clouds, landed at Bremen, where a stay was made for lunch. Continuing, they flew across Denmark to Halmstad, thence along the Swedish coast to Torslanda aerodrome, where they landed at 4.20 p.m. They were received here by the British Consul-General, the President of the Swedish Aero Club, and General Wrangel.

NOTICES TO AIRMEN

Notification of Forced Landing or Arrival at Destination

1. The attention of all pilots is called to the necessity, when flying to the Continent or to Ireland, of communicating without delay to the aerodrome of departure news of a forced landing or of safe arrival at the destination.

2. In the case of flights to Customs aerodromes in Belgium,

to shipping to the effect that an aircraft is missing, and special watches being maintained by the coastguard.
(No. 58 of 1923.)

Sweden : Gothenburg (Torslanda) Air Station

1. Gothenburg (Torslanda) Air Station.

Civil Customs Aerodrome and Seaplane Station.

Position.—Lat. 57 deg. 42 mins. N., Long. 11 deg. 47 mins. E. Situated approximately 11 kms. W. of centre of Gothenburg, and 2½ kms. S. of Torslanda Church on the Rivojorden.

Description.—The ground is roughly triangular in shape, giving a run of about 500 metres in any direction. The surface is very good. Seaplanes should alight on the open space of water between the Station and the islands of Flat-holmen and Risholmen. A dredged channel 10 feet deep, marked on both sides by buoys, connects the alighting area with the slipway. To the N. of the slipway the water is shallow and unsuitable for seaplanes to alight upon.

Accommodation, Supplies, etc.—There is a large slipway 30 metres in width and one hangar, 60 by 26 metres, door 30 by 5.5 metres. In addition several canvas hangars have been temporarily erected to provide extra accommodation during the Gothenburg Aero Exhibition. Minor repair facilities, tugs for seaplanes, petrol, oil, and water are available. Machines taking part in competitions in connection with the Exhibition are exempted from landing fees.

A wind indicator is erected near the permanent hangar in the south corner.

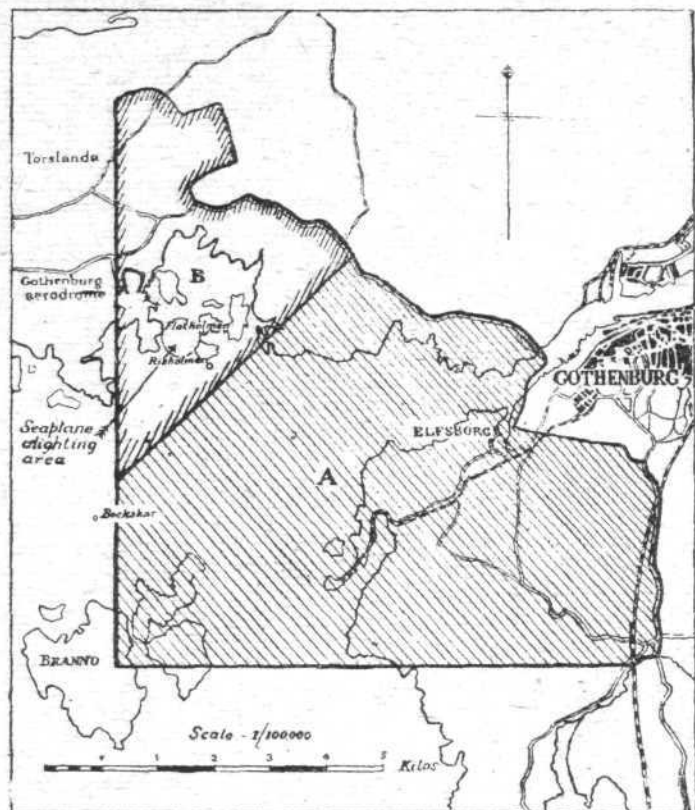
Communications.—There is a direct road to Gothenburg from the station. A steamship service also runs to Gothenburg, taking from 30 to 40 minutes on the journey.

2. Gothenburg Prohibited Area.—

The air station lies within a portion of the prohibited area of Alvsborg (Elfsborg) fortress. (See accompanying map.)

(a) Flight is entirely prohibited over the area mentioned in para. 6 (c) of N. to A., No. 19 of 1923, i.e., the part bounded in the south by the parallel of latitude through Brannö Kummel, and in the west by the meridian of longitude through Brannö Kummel as far as the Bocken Rock, and thence by a line drawn from the said rock through the south-eastern point of Hirtholm. (This area is marked A on the map.)

(b) The portion of the prohibited area lying to the N.W. of the line drawn from the Bocken Rock through the south-eastern point of Hirtholm, and bounded on the west by the meridian through the Bocken Rock (the area marked B on map) may be flown over at a height not exceeding 3,000 metres (9,800 feet). The air station lies within this portion.
(No. 60 of 1923.)



France and Holland, the aerodrome authorities send such notifications of arrival by W/T as a matter of routine.

3. Failure to notify the aerodrome of departure within a certain number of hours results in a general broadcast message



ANXIOUS MOMENTS: Waiting at Hendon for the first in on Saturday for the King's Cup. Standing, right to left: The Duke of Sutherland, Mr. J. D. Siddeley and General Sir Capel Holden, the Judge.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

COMMITTEE MEETING

A MEETING of the Committee was held on Wednesday, July 18, 1923, when there were present: Lieut.-Col. Alec Ogilvie, C.B.E., in the Chair, Mr. Ernest C. Bucknall, Lieut.-Col. M. O. Darby, Colonel F. Lindsay Lloyd, C.M.G., C.B.E., Lieut.-Col. M. O'Gorman, C.B., Sir Mortimer Singer, K.B.E., Mr. T. O. M. Sopwith, and the Secretary.

Election of Members.—The following new Members were elected:—

Major Thomas Morgan Barlow.
Flying Officer Herbert Geoffrey Brookman.
Flight-Lieut. Paul Ward Spencer Bulman.
Flying Officer Basil Royston Carter.
Observer Officer Arnold Cadman Clinton.
Flying Officer Laurence Archibald William Deane.
Flying Officer Charles Drury Fuller.
Flight-Lieut. John Francis Patrick Gallagher.
Flight-Lieut. Rollo Amyatt de Haga Haig.
Flight-Lieut. John Reginald Howett.
Flying Officer Patrick John Richardson King.
Squad-Leader Patrick Alexander Ogilvie Leask.
Flight-Lieut. Henry Dunboyne O'Neill.
Flight-Lieut. Owen Washington de Putron.
Edwin William Roberts.
Fred Rowarth.
Flying Officer Christopher Edward Bluett Winch.
Noel Hedley Kilby (temporary).

The King's Cup Race.—The reports of the Racing Committee, the Stewards of the Meeting and the Judge were received.

On the motion of the Chairman a unanimous vote of thanks was passed to the following for the valuable assistance rendered in the organisation of the Race:—

Royal Air Force for exhibition flying and assisting with mechanics at all controls.

The Air Ministry for assistance rendered by the following Departments:—

Chief of the Air Staff (Controllerate of Communications) for wireless communication between all controls.

Supply and Research for assistance rendered to competitors by A.I.D. officials at all controls.

Controller of Aerodromes and Licensing for assistance at all aerodromes.

Meteorological Office for supplying weather reports at all controls.

Press Section for distributing information to the Press.

The Handicappers.—Capt. R. J. Goodman Crouch, assisted by Mr. F. Rowarth.

Officials.—

(Hendon).—A. J. A. Wallace Barr, C. G. Grey, F. Rowarth, Major H. E. Watkins.

(Birmingham, Castle Bromwich).—Major Gilbert Dennison, Capt. F. R. Walker, Flight-Lieut. J. C. Brooke, D.S.C., Capt. A. G. Lamplugh, M.C.

(Newcastle-on-Tyne, Town Moor).—A. E. George, H. T. Wright, Norman Forster, W. J. Ley.

(Glasgow, Renfrew).—J. Allison, Junr., Lieut.-Col. W. A. Bristow, Alan E. L. Chorlton, J. H. Spottiswoode.

(Manchester, Alexandra Park).—J. Lord, Com. F. L. M. Boothby, R.N., Major W. H. Bell, Hon. Geoffrey Cunliffe.

(Bristol, Filton).—H. J. Thomas, Capt. F. R. Walker, Major W. E. Plaister, G. W. Towse.

Judge.—Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S.

Stewards.—Lieut.-Col. L. F. Blandy, D.S.O., Major-Gen. Sir W. S. Brancker, K.C.B., Colonel F. Lindsay Lloyd, C.M.G., C.B.E.

F.A.I. Conference, Gothenburg.—Lieut.-Col. M. O'Gorman, C.B., was nominated to represent the Club at the F.A.I. Conference to be held in Gothenburg, commencing August 8.

Colonel O'Gorman submitted the various questions on the agenda, and obtained the views of the Committee thereon.

RACING COMMITTEE

A meeting of the Racing Committee was held on Wednesday, July 18, 1923, when there were present: Lieut.-Col. M. O. Darby, in the Chair, Commander James Bird, Capt. R. J. Goodman Crouch, Lord Edward Grosvenor, Colonel F. Lindsay Lloyd, C.M.G., C.B.E., Mr. W. O. Manning, Lieut.-Col. A. Ogilvie, C.B.E., Mr. T. O. M. Sopwith, and the Secretary.

Aerial Derby.—It was decided, subject to the consent of the Air Ministry, to hold the Aerial Derby at Waddon Aerodrome, Croydon, on the August Bank Holiday.

Schneider Cup.—The supplementary regulations were finally considered and approved, and ordered to be issued to the competing countries.

The report on the proposed course from Major-Gen. Sir W. S. Brancker, K.C.B., who had flown round it, was received, and it was decided that turning points should be at Selsey, Southsea and Cowes.

THE KING'S CUP CIRCUIT OF BRITAIN AIR RACE

Winner.—The King's Cup.—Entrant, J. D. Siddeley, C.B.E.; pilot, F. T. Courtney.

2nd, £100, presented by Sir Charles G. Wakefield.—Entrant, George Robey; pilot, A. J. Cobham.

Subsidiary Prizes

£100 (presented by the proprietors of the *Daily Telegraph*).—Entrant, J. D. Siddeley, C.B.E.; pilot, F. T. Courtney.

Cup, value £50 (presented by Lord Invernairn of Strathnairn).—Pilot, F. T. Courtney.

£50 (presented by the Directors of the Bristol Aeroplane Company).—Entrant, J. D. Siddeley, C.B.E.; pilot, F. T. Courtney.

£40 (presented by the Corporation of Glasgow).—Entrant, J. D. Siddeley, C.B.E.; pilot, F. T. Courtney.

£25 (presented by the *Newcastle Chronicle*).—Entrant, J. D. Siddeley, C.B.E.; pilot, F. T. Courtney.

£25 (presented by the *Manchester Guardian*).—Entrant, The Right Hon. Sir William Joynson-Hicks, Bt., M.P.; pilot, L. L. Carter.

20 guineas (presented by the Bristol Rotary Club).—Entrant, J. D. Siddeley, C.B.E.; pilot, F. T. Courtney.

Cup, value 20 guineas (presented by the Bristol Constitutional Club).—Entrant, J. D. Siddeley, C.B.E.; pilot, F. T. Courtney.

Offices: THE ROYAL AERO CLUB,

3, CLIFFORD STREET, LONDON, W. 1.

H. E. PERRIN, Secretary.

Shooting at Bisley

THE shooting in the final stage for the King's prize resulted in a win for Capt. E. H. Robinson, late R.A.F. At first he tied with Lance-Corpl. W. T. Norton (late Queen's Westminsters) with a total score of 232, but beat him on the deciding shoot with a score of 5-5-5 (15) against Norton's 4-4-3 (11). Sir Samuel Hoare, the Secretary of State for Air, sent the following message to the winner of the King's prize: "The Royal Air Force joins with me in congratulating you on your splendid victory today and on adding new distinction to records of the Flying Service."

One of the competitors, Major Bapty, flew over from Birmingham (where he had an appointment), but not being

able to find a suitable landing-place near the range, he had to go on to Brooklands and come on by car from there. As a result he was just too late for the "900 yards," and had to compete in the "1,000 yards."

Pescara Helicopter's Successful Flight

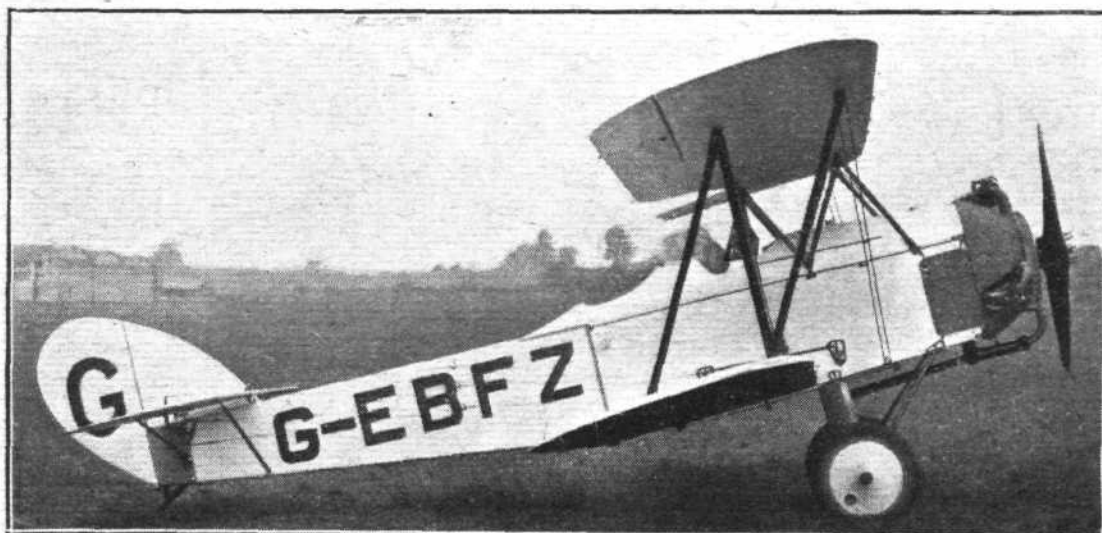
M. PESCARA succeeded, on Saturday, the 21st inst., in making a double circular flight of 650 m. (710 yards) on his helicopter at Issy aerodrome. He also succeeded in rising from the ground, and landing within a circle of 10 m. (11 yards) diameter, and later flew in a straight line for 460 m. (503 yards). Pescara is attempting to win the prize offered by the French Aero Club for the first circular flight of 1 km. on a helicopter.

THE "BRISTOL" LUCIFER SCHOOL MACHINE

THE new "Bristol" Lucifer school biplane is a strong and up-to-date machine, excellently suitable for instructional purposes, and so simple and strong in design and structure as to withstand hard service and constant use without much attention or depreciation. In addition to many special features, special attention must be drawn to the great reserve of power which has been provided for. From the figures given in the specification it will be seen that the total loaded weight is 1,700 lbs. The British Air Ministry's Certificate of

The upper and lower wings are identical and interchangeable, and are of the single bay type. This arrangement is not only convenient, but reduces the spares which should be carried. The interplane struts, and those carrying the centre section, are of "N" formation, and require no truing up.

An oleo-steel spring chassis is fitted, the oleo plungers having a special type of tapered needle valve controlling the passage of the oil through the plunger and giving constant oil pressure throughout the stroke of 8 ins. The fitting of an oleo



The "Bristol" Lucifer School Machine: Side view.

Airworthiness, however, specifies that a load up to 2,140 lbs. may be carried.

The 100 h.p. "Bristol" Lucifer engine is the power unit used. This is not only an engine of great reliability and simplicity of design, but as an engine of modern type it allows of the pupil gaining valuable experience of radial engines during the period of instruction. The consumption of this engine at cruising speed is extremely low, amounting to about 5 gallons of petrol and 2 pints of oil per hour. A starting handle is fitted to the Lucifer engine, so that the trouble,

chassis, of course, helps considerably to reduce the risk of damage by reason of indifferent landings, whilst it also materially tends to lengthen the life of the machine.

The tail incidence can be varied by a lever quadrant to trim the machine under all conditions of speed and load distribution.

In the separate cockpits provided for pilot and pupils dual sets of controls are fitted, whilst the instruments are also duplicated. Communication between the cockpits is by telephone.

The "Bristol" Lucifer School Machine: Three-quarter front view.



waste of time and danger of propeller swinging is entirely obviated. The petrol is provided from a scuttle tank fixed in front of the pilot, and is fed by simple gravity, a large and easily demountable filter being fitted. The unusual simplicity of the petrol and oil systems also calls for remark.

In order to eliminate any possibility of danger from fire, steel fireproof bulkheads are fitted behind the engine, and all control connections pass through fireproof glands. Carburettor intakes are carried through the bottom side of the engine cowling, thus eliminating any possibility of the accumulation of petrol.

The specification of this machine, which, as regards its general outline, resembles the Bristol taxiplane, is:—Span, 31 ft. 2 ins.; length, 24 ft. 4 ins.; height, 5 ft. 10 ins. Weight empty, 1,180 lbs.; pilot and pupil, 360 lbs.; petrol (15 galls.), 110 lbs.; oil (2½ galls.), 25 lbs.; equipment, 25 lbs.; total weight, 1,700 lbs. Weight per h.p., 17 lbs.; weight per sq. ft., 6 lbs. Speed at ground level, 95 m.p.h.; speed at 6,500 ft., 92 m.p.h.; speed at 10,000 ft., 90 m.p.h. Climb to 1,000 ft., 1 min. 40 secs.; climb to 6,500 ft., 13 mins. Fuel consumption at cruising speed; petrol consumption, 5 g.p.h.; oil consumption, 2 pints/hour.

New Air Aide-de-Camp Appointed

THE Air Ministry announces that H.M. the King has approved of the appointment of Group Captain Cyril Louis

Norton Newall, C.M.G., C.B.E., A.M., to be Air Aide-de-Camp to His Majesty vice Air Commodore Edgar Rainey Ludlow-Hewitt, C.M.G., D.S.O., M.C.

Monoplane Glider "Norbet"

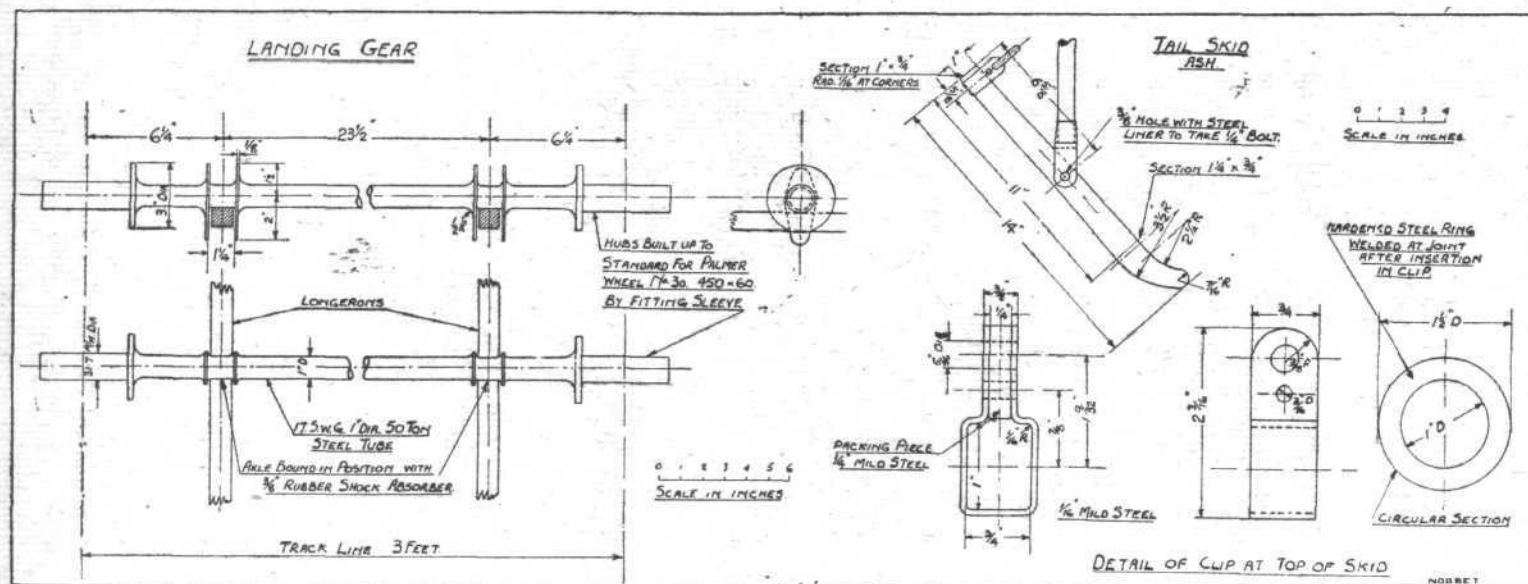
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The Tail Plane Construction

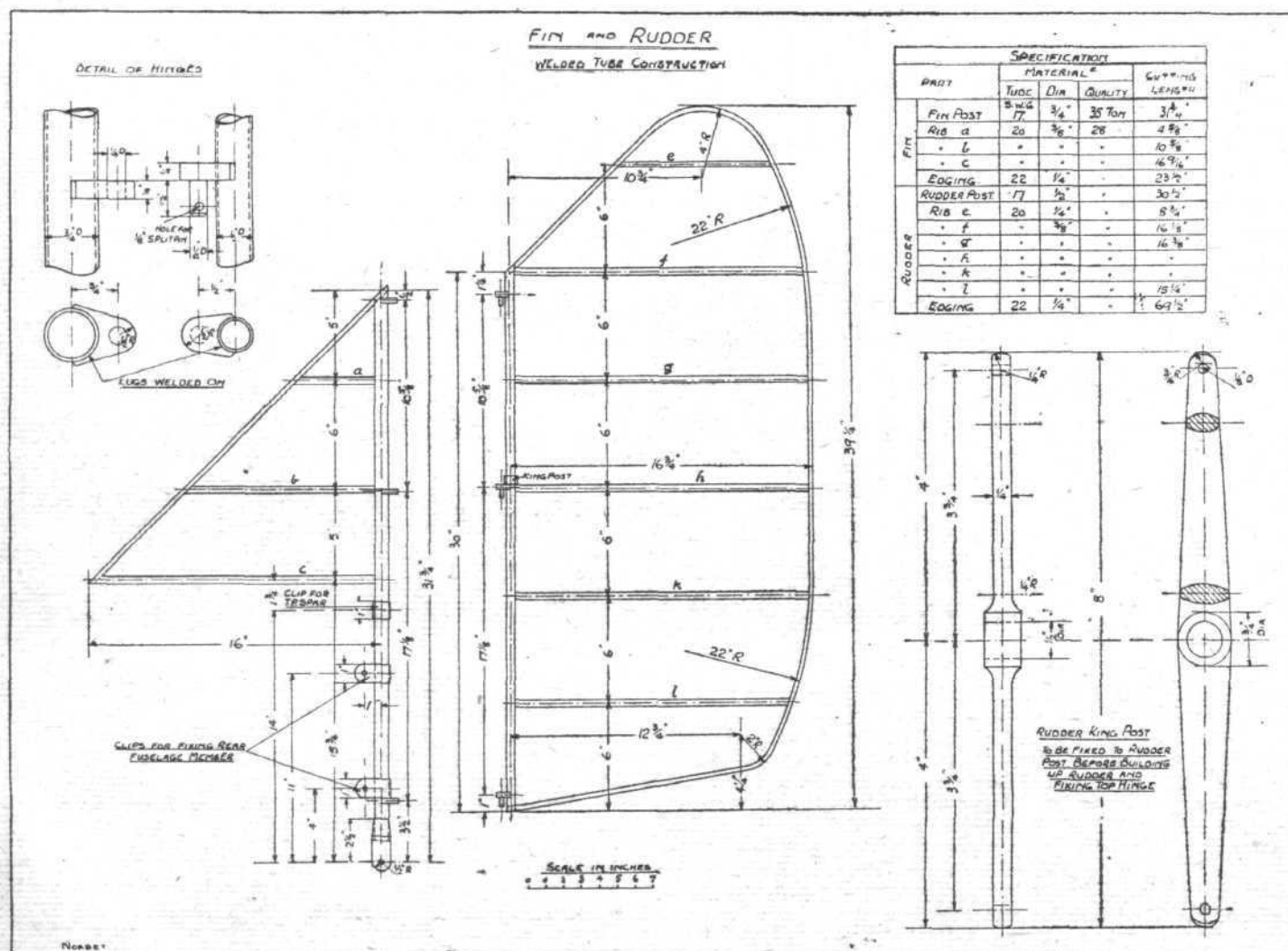
The spars and ribs of the tail plane are generally similar to those of the wings, the former being of box section with spruce flanges and three-ply webs, and the latter built up of spruce strips measuring $\frac{1}{4}$ in. by $\frac{3}{4}$ in. The elevator ribs are

of I-section, with three-ply web and spruce flanges. The elevator trailing edge is of spruce, rounded off as shown in the drawing. As distinct from the tail plane spars, the spar of the elevator is of solid spruce, and of the dimensions shown.

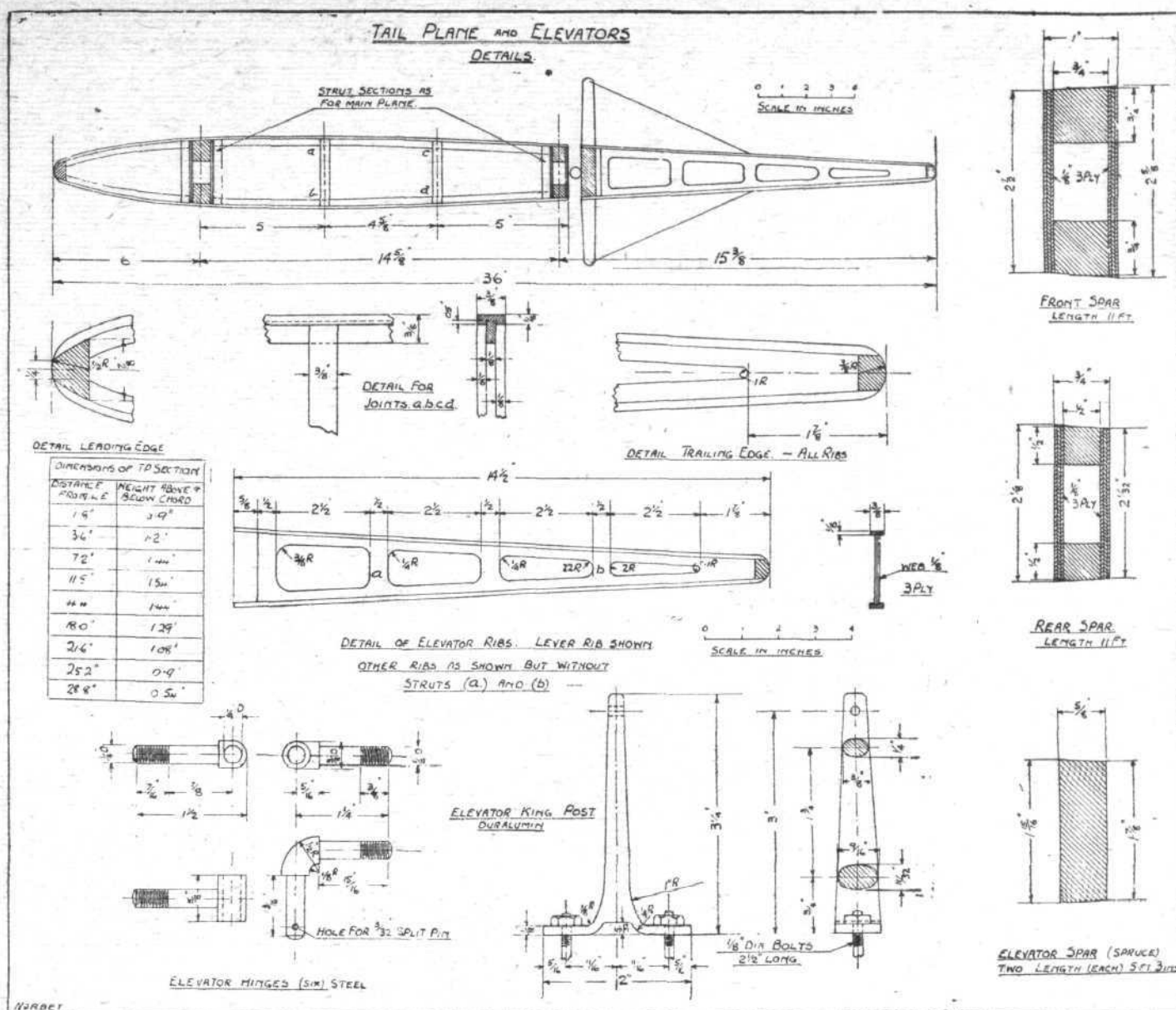
As regards fittings, the hinges and king-post are shown in



MONOPLANE GLIDER "NORBET": Details of undercarriage.



MONOPLANE GLIDER "NORBET": Details of fin and rudder. The welded tube construction is entirely unsuitable for amateur construction.



MONOPLANE GLIDER "NORBET" : Details of tail plane and elevator construction.

the drawings. The objection to both is that they would be expensive to make, and the same applies to the whole construction of the fin and rudder, which are made of steel tubing and of welded construction. If these machines were intended to be built by aircraft firms and in large quantities, the form of construction might be suitable, but for amateur construction the welded tubular work is quite out of the question. It might be pointed out that features of design such as this were given due consideration in judging the competing designs.

The Undercarriage

The undercarriage is of very simple type, and consists of a 1-in. diameter 17 S.W.G. steel tube running across the fuselage and sprung from the lower longerons by 3/4-in. rubber shock absorbers, wound around the axle and the longerons. A swivelling tail skid of ash completes the undercarriage. Although the design is simple, the construction is open to the same criticism as that of the rudder and fin, too much welding is called for.

Controls

Although an important item in the construction of a glider, the controls have received no attention whatever, or, at any rate, no drawings are given, and no reference made to the form of construction suggested. Obviously a control stick and a rudder bar are intended to be used, but the designer has left their exact form to the imagination of potential constructors.

We have, however, received from Mr. Sydney O. Smith, the designer of "Norbet," a letter in which he states that should any further details be required he will be glad to do his best. He also calls attention to the fact that he has changed his address, which is now 162, Keith Lucas Road, Cove, Hants. If, therefore, any reader should desire further particulars, or the elucidation of certain points which may have been obscured in the particulars published in *FLIGHT*, we would recommend him to write to Mr. Smith direct, as in that manner considerable time, not to mention much correspondence, may be saved.

Commodore Louis D. Beaumont Cup

PARTICULARS are to hand of a competition organised by Commodore Louis D. Beaumont, the well-known American sportsman of Dayton, Ohio, and Paris, who has given a sum of 200,000 francs for a speed test. It is to be divided into two annual awards, each comprising an object of art of the value of 35,000 francs each, by the sculptor M. Paul Landowski, of Paris. These are now on view in Paris. In addition there will be two cash prizes of 75,000 francs each. The competition is open to pilots or aviation crews of any nation, except those at war with France between 1914 and

1918 not belonging to the League of Nations. The first race will take place at Istres aerodrome, near Marseilles, on October 14.

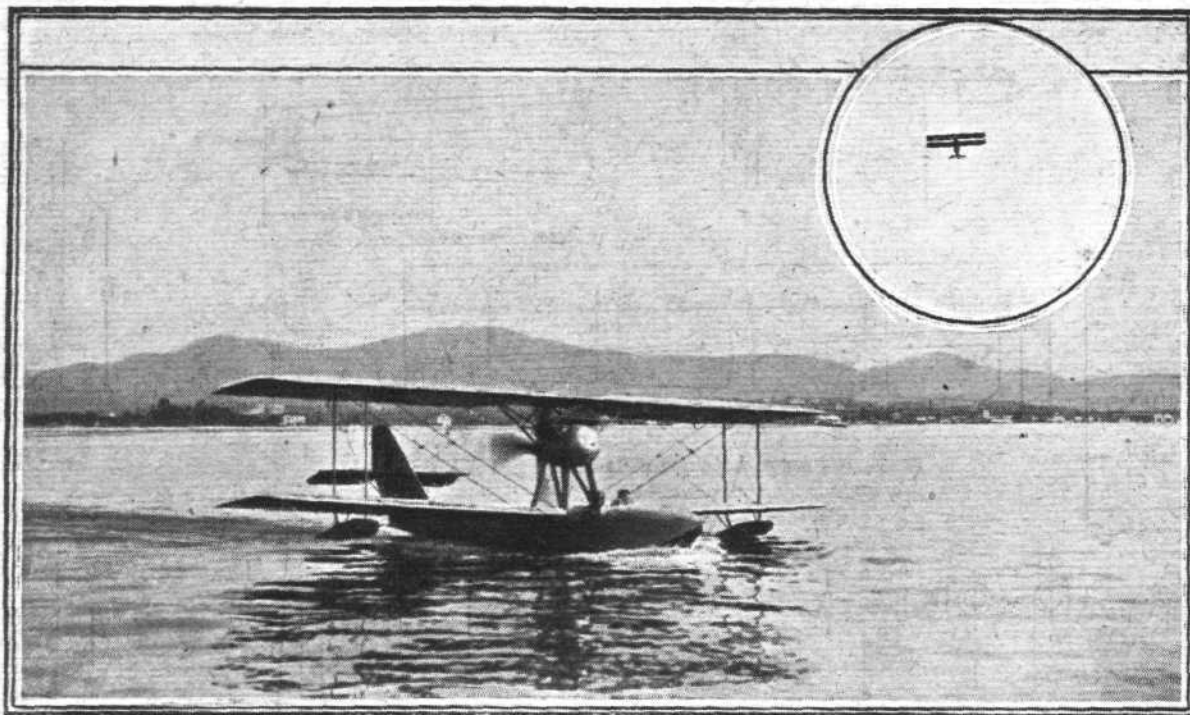
It will be flown over a 300 km. circuit, starting from and finishing at the Istres aerodrome, and a minimum speed of 290 k.p.h. must be attained to secure a prize. Landings, repairs and fuel replenishments are allowed. The entrance fee is 5,000 francs, of which 3,000 francs are returnable upon the entered machine crossing the starting line. Entries close on August 1, to be addressed to the Aero Club, France.

LES CHANTIERS AERO-MARITIMES DE LA SEINE

One of the Progressive New French Firms

IN the early days of British aviation the name Lawrence Santoni was well known in this country in connection with various British aircraft undertakings, notably the British Deperdussin Company of Highgate, of which Mr. Santoni was at that time the business head, the late Commander Porte being in charge of the technical side. Incidentally, it may be

recalled, Mr. Frederick Koolhoven, who later became famous in connection with Armstrong-Whitworth, and afterwards B.A.T. aircraft, was works manager of the British Deperdussin works. Early in the War, Mr. Santoni went to Italy, and there established the company which produced the famous Savoia flying boats. His chief designer was M. Raphael Conflenti,



THE C.A.M.S. 30 E TAXYING OFF ST. RAPHAEL : This machine is a side-by-side two-seater flying-boat intended for school work. Note how the hollow step formation of the bottom of the hull results in pushing up a bow wave, without the spray thrown up by V-bottom types. The inset shows the C.A.M.S. 33 T in flight.



TWO C.A.M.S. FLYING BOATS : In the foreground the type 31 single-seater fighter. Note the machine gun scoops in the deck. On the right, the experimental twin-engined commercial machine, type 33, in which the Hispano engines are placed tandem fashion.

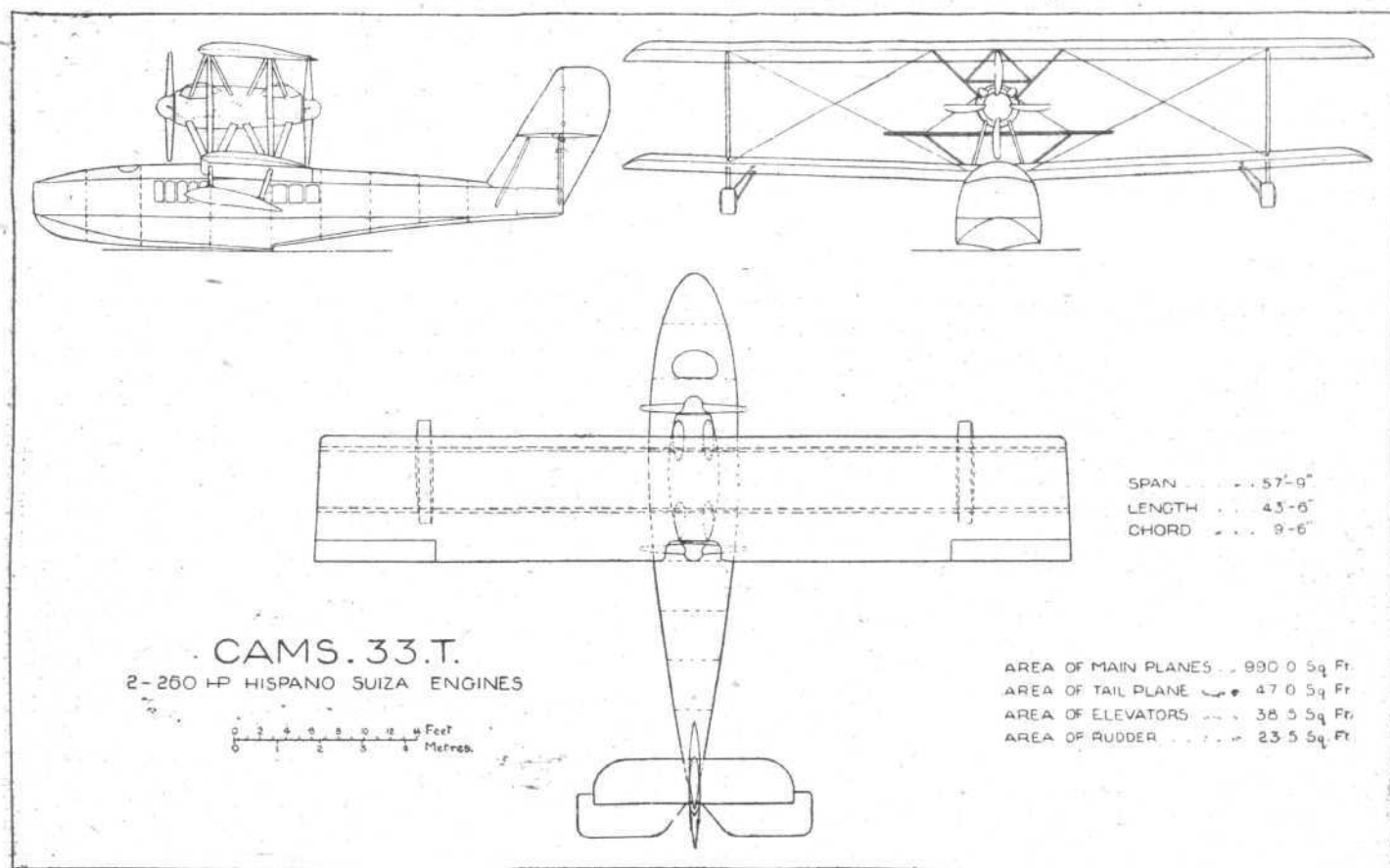
who, among other machines, designed the Savoia flying boat on which Signor Janello put up such a splendid performance in the Schneider Cup Race at Bournemouth in 1919.

During the years following the War, the economic situation in Italy was not such as to allow of any extensive aviation programme being carried out, and although he carried on as long as he could, Mr. Santoni ultimately decided to try his luck in France. In 1920 he established the Chantiers Aero-Maritimes de la Seine, with works at St. Denis. The first year was devoted to technical organisation, the planning of types and so forth. In 1921 the industrial organisation was put in hand, and the construction of experimental types commenced. At the present time four different main types have been evolved, and have passed the experimental stage. It should be mentioned in this connection that M. Conflenti is still chief designer, and that to his genius all the C.A.M.S. types are due.

The C.A.M.S. works at St. Denis occupy an area of 8,000 sq. m. near the Seine, and the work of testing is carried out at Le Pecq, near St. Germain. The acceptance tests are, however,

For the Coupe Schneider of 1922, which was won by Capt. Biard on a Supermarine "Sea Lion," with Napier "Lion" engine, M. Conflenti designed the C.A.M.S. 36, a small flying boat with 300 h.p. Hispano engine. This machine, which was finished too late to be thoroughly tested before the race, and consequently did not take part, is chiefly remarkable for the fact that the pilot is situated behind the planes, the engine driving a tractor screw. On tests the C.A.M.S. 36 attained a speed of 250 km. (155 m.p.h.). It seems probable that a similar machine will be entered by Mr. Santoni for this year's Schneider Cup Race at Cowes.

The latest type to be actually produced by the Chantiers Aero-Maritimes de la Seine at their St. Denis works is the C.A.M.S. 33 T, a twin-engined commercial flying boat, which is mainly remarkable for the fact that its engines are arranged in tandem, the front engine driving a tractor screw and the rear engine a pusher. The accompanying general arrangement drawings show the main dimensions, form, etc., of the C.A.M.S. 33 T, which is also shown in one of the accompanying photographs. It should be pointed out, however, that the



THE C.A.M.S. 33. T.: General arrangement drawings.

carried out over the Mediterranean, at the St. Raphael air station.

At the last Paris Aero Show a very neat little school machine, the C.A.M.S. 30 E, was exhibited, and was fully described in *FLIGHT* at the time. It is a single-engined two-seater flying boat, in which the occupants sit side by side. The machine thus lends itself to school work, for which it was mainly designed, but can also be used as a two-seater touring machine. The C.A.M.S. 30 E has a wing area of 43 sq. m. (463 sq. ft.) and weighs 2,150 lbs. empty. The total loaded weight is 2,720 lbs., and the engine fitted is a low-compression Hispano-Suiza of 150 h.p.

Somewhat similar in general design, *i.e.*, as regards the square-sided boat with concave step, is the C.A.M.S. 31, which is a single-seater fighter with 300 h.p. Hispano engine. This machine is chiefly remarkable for its manoeuvrability. It can be looped, spun, rolled, etc., like a small land machine, and has an excellent performance. The wing area is 33 sq. m. (355 sq. ft.), and the total loaded weight, 3,100 lbs. The maximum speed at sea level is 200 km. (124 m.p.h.), and the stalling speed 88 km. (55 m.p.h.). The climb is extremely good, an altitude of 2,000 m. (6,600 ft.) being reached in 8 minutes. The climb to 5,000 m. (16,400 ft.) occupies 33 minutes. It may be mentioned that the C.A.M.S. 31 has just passed its acceptance tests. A variation of this machine can be used as a mail carrier where great speeds rather than heavy loads are desired.

machine shown in the photograph is the experimental type, in which the bow is pointed, while the production type will have the high vertical bow shown in the general arrangement drawings.

Constructionally the C.A.M.S. 33 follows usual Conflenti practice—*i.e.*, the boat hull is planked mainly with three-ply, although the bottom and step is reinforced with planking strips over the ply-wood. The hull form is, however, very different from those which one usually associates with boats designed by M. Conflenti. The sides are less flat than usual, although but slightly curved compared with boats of the "P" type, and the bottom, instead of showing the flat aft of the step and the concave step itself, is of the V-type, fairly pronounced in front and slightly less so aft of the step. The "hollow" step, although apparently quite suitable for a machine to be used mainly over smooth water, is unsatisfactory in anything of a seaway, and presumably with this fact in view the C.A.M.S. 33 has been given the V-bottom, curving slightly towards the chine. The central, or keel, portion is flat, in order to form a compromise between the quite flat and the straight V-bottom. The vertical bow designed for the production type is probably the result of experience with the experimental machine having shown the low pointed bow to give a "dirty" hull. There is still, however, but a single step.

The pilot's seat is in front, near the bow, and the cabin extends aft from this to the trailing edge of the lower plane.

There is seating accommodation in the cabin for eight passengers, and the machine carries a mechanic as well as the pilot, bringing the total capacity up to 10 persons. The seats are arranged along the sides, and the passengers look out through Triplex covered windows in the sides of the hull. As the root of the lower wing is placed in the roof of the cabin, there is nothing to obstruct the view, which, as a matter of fact, is particularly good in the C.A.M.S. 33.

The two engines, as already mentioned, are placed tandem-fashion between the wings. They are enclosed in a streamline nacelle, which should offer but little resistance, although the strutting necessary would appear likely to bring the power unit resistance up to a fairly high figure. From below, *i.e.* from the top of the hull, the engine bearers are supported by stout struts forming a letter W, as seen from the side. The top plane is supported on a somewhat elaborate structure of steel struts, forming a letter M in side view and an inverted A with diagonal ties in front elevation. The upper part of this centre-section structure is obviously intended to reduce the stresses in the top spars, there being but one pair of inter-plane struts on each side. The engine nacelle is provided with inspection doors, by means of which the magnetos, carburettors, etc., may be got at. The main petrol tanks are placed inside the hull, aft of the cabin, from which they are separated by a fireproof bulkhead.

The biplane wings are of usual construction, with spruce spars and three-ply ribs. While the top plane is straight as in all Confront designs, the lower plane of the C.A.M.S. 33 has a pronounced dihedral. The wing section, although not

one of the very high lift ones, is fairly deep, and allows room for spars of reasonably good depth, thus allowing of the strutting being reduced to one pair on each side.

The tandem arrangement of the engines, although having been found in this country and in Germany not to be very satisfactory when placed on the wings, appears to give good results in the C.A.M.S. 33, possibly because it is away from the wings, and it certainly has the advantage that the centre of thrust is in the same position whether one or both engines are running.

Incidentally, it is of interest to note that the C.A.M.S. 33 is capable of flying, although at reduced speed, on one engine only. This fact should make for good reliability, as in the event of one engine failing it should be possible to reach port on the remaining power unit.

Following are the main characteristics of the C.A.M.S. 33:—Length o.a., 13.27 m. (43 ft. 6 ins.); span, 17.62 m. (57 ft. 9 ins.); wing area, 92 sq. m. (990 sq. ft.); weight empty, 2,500 kg. (5,500 lbs.); weight of fuel, 540 kg. (1,185 lbs.); useful load, 960 kg. (2,100 lbs.); total loaded weight, 4,000 kg. (8,785 lbs.); engines, two Hispano-Suiza of 260 h.p. each at 1,600 r.p.m., total 520 h.p.; power loading, 17 lbs./h.p.; wing loading, 9 lbs./sq. ft.; speed at sea level, 175 km. (108 m.p.h.); stalling speed, 80 km. (50 m.p.h.); speed with one engine running, 130 km. (80 m.p.h.); climb, 3,000 m. (10,000 ft.) in 25 minutes; ceiling, 5,000 m. (16,500 ft.).

The standard amount of fuel carried is sufficient for 300 miles, calculated on the assumption that there is a head wind blowing of 10 m. per second (22.5 m.p.h.).

DISARMAMENT AND THE AIR FORCE

DURING the debate on July 23 in Parliament upon the Labour motion for disarmament the question of the Air Force was several times brought into the picture. Sir Samuel Hoare, Secretary of State for Air, when dealing with this aspect of the arguments, said that while few people regarded the proposed increase in connection with the Air Force with hostility, and still fewer with satisfaction, the great majority regarded it as a regrettable necessity. Here we were, the capital of a great Empire, the centre of a great industrial life. We had ceased to be an island. Indeed, the fact that we were separated from the Continent by a narrow stretch of sea made the problem of air defence not less but more difficult. We saw the great developments that were taking place all over the world in air arms. Whilst air raids were sufficiently terrible in the sporadic and infrequent form they took during the War, they would be a hundred times more terrible now. The risk was so terrible that, however remote, however friendly might be our relations with other nations, no Government, Conservative, Liberal, or Labour, could afford to allow it to continue. On this account the Government, greatly against their will, were forced to authorise the expansion of the British Air Force. This would be a home-base defence force, and would not be available for aggressive and hostile operations beyond the reach of its home bases. He would not go so far as to say that the question of national security was irreconcilable with the question of a reduction of armaments or total disarmament; but the only way to reconcile them was to proceed on two definite principles. In the first place, disarmament must be general. Supposing the Government issued an invitation to the world for an international con-

ference on disarmament, had they any reason to suppose that all the Great Powers of the world would attend it? He was not sure that the practical difficulties of formulating a programme to submit to such a conference had been sufficiently considered. The reduction of our air forces, for example, raised a number of difficult and complicated questions. Was it possible to limit the use of aircraft in war? At present the whole tendency of war was to increase its boundaries, and, in the case of the air, there was the difficulty of defining between civil and military aviation. There was the fact that if they restricted the development of military aviation they might be impeding or restricting the development of the means of communication. There were also practical difficulties in the way of restricting the number of military machines and pilots. Over and above these difficulties, there was the fact that air power did not consist in the actual number of machines or the actual number of pilots, but in the capacity of any country industrially; its capacity of material and wealth to develop an air force quickly. Although not agreeing to the summoning of an immediate conference, the Government were exploring all these approaches towards a reduction of armaments. They could point to the fact that although our Imperial commitments had increased, the number of men in the forces of the Crown—even including the Air Force—was many thousands less today than it was in 1913. That was the evidence of their good will, and he asked the House to allow the Government to choose the best time and to accept the amendment to the resolution rather than to force the Government into an action which might have the opposite effect from that which they all desired.

ZENITH CUP COMPETITION

THE flying competition for the Zenith Cup, which took place on Saturday and Sunday last, although on distinctly original lines, was not, it would seem, a particularly exciting event—only three out of nine entries finishing.

Entries for this race were limited to a maximum of 275 kg. (606 lbs.) of fuel, and the total distance of 770 km. (480 miles) for the two stages (Orly, Paris, to Bron, Lyons, on the Saturday, and back to Orly on the Sunday) had to be covered with a minimum average speed of 70 km. (43 miles) p.h. The prizes offered were as follows:—1st, 30,000 fr.; 2nd, 5,000 fr.; 3rd, 3,500 fr.; 4th, 2,500 fr.; 5th and 6th, 2,000 fr.

The nine entries for the Zenith Cup consisted of:—Finat (15 h.p. Dewoitine); Maneyrol (15 h.p. Peyret monoplane); Brussaix (70 h.p. Buscaylet monoplane); Lafon and Roques (80 h.p. Anzani-Potez (2-35 h.p. Anzani) type VIII biplanes); Bécheler (80 h.p. Le Rhone-Caudron C.27 biplane); Bajac (120 h.p. Le Rhone-Spad 29 biplane); Vanlaère (180 h.p. Hispano-Suiza-Caudron C.59 biplane); Bossoutrot (300 h.p. Salmson-Farman F.90 limousine). Of these, three—Maneyrol, Brussaix and Bajac—were non-starters. The six remaining

competitors started on Saturday morning at intervals of a few minutes. Finat returned almost immediately, and landed owing to engine trouble. He made a second start, but after about four circuits of the aerodrome, finally decided not to proceed. Lafon landed at Pretty, 80 km. from Lyons, so only four reached Bron.

On the second stage, Bron-Orly, Vanlaère dropped out, thus leaving the race to Bossoutrot, Bécheler and Roques, who all successfully completed the final journey.

First place in the competition was obtained by Bossoutrot (300 h.p. Salmson-Farman), whose consumption of petrol was 235.77 kg. (520 lbs.), or 475 grammes per kg. of load carried. His average speed was 71 m.p.h. This is the second Farman success this season.

Roques on the 80 h.p. Anzani-Potez biplane came second, with a consumption of 94.05 kg. (207.4 lbs.) or 616 grammes per kg. of total load.

Third place therefore went to Bécheler, on the Hispano-Caudron, with a consumption of 184.43 kg. (406.6 lbs.), or 922 grammes per kg. of load.

THE ROYAL AIR FORCE

London Gazette, July 17, 1923

General Duties Branch

W. E. Cowan is granted a short service commn. as Flying Officer with effect from, and with seny. of, July 4. Air Commodore C. L. Lambe, C.B., C.M.G., D.S.O., is restored to full pay from h.p.; July 7. Pilot Officer J. J. Comerford to be Flying Officer; July 1.

The following Pilot Officers are confirmed in rank:—G. Terrell, F. S. Henderson; May 27. D. R. Stewart; June 4. E. L. W. H. Alms, R. S. Blucke, F. A. Briggs, E. S. Brinsmead, A. W. Daly, F. Larman, C. G. H. E. Lumsden, F. C. Marsh, B. C. Mason, C. L. Moores, A. J. R. Moss, E. R. Newbigging, F. J. O'Doherty, O. R. Pigott, J. C. Savory, C. W. A. Scott, A. R. Woodyatt; June 9.

The following are transferred to the Reserve:—Class A.—Flying Officer C. G. Ferrell; July 19. Class B.—Flight-Lieut. A. S. Goodwin; July 9. Observer Officer F. Lodge is placed on the ret. list; July 18.

The following are placed on the retired list on account of ill-health:—Flying Officer F. W. Taylor, Observer Officer T. C. Tyers; July 18. Flying Officer F. K. Wright relinquishes his short service commission on account of ill-health; July 16. Flying Officer M. J. Norton is dismissed the Service by sentence of General Court Martial; July 2.

Princess Mary's R.A.F. Nursing Service

The following ladies are confirmed in their appointment as Staff Nurses:—

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the R.A.F. are notified:—

General Duties Branch

Squadron Leaders: D. Stewart, M.C., A.F.C., to R.A.F. Depot (Non-effective Pool). 25.6.23, on transfer to Home Estab. C. H. Hayward to No. 7 Sqdn., Bircham Newton. 5.7.23.

Flight Lieutenants: T. C. Thomson to Boys' Wing, Cranwell. 16.7.23. R. A. Young to R.A.F. Depot (Non-effective Pool). 1.7.23. The Posting of this Officer to No. 1 School of Technical Training (Boys), Halton, as previously notified, is hereby cancelled. E. Thornton to No. 1 School of Technical Training (Boys), Halton. 16.7.23. T. H. Newton, D.S.C., to Iraq Command. 1.6.23. F. R. Wynne, M.B.E., to No. 55 Sqdn., Iraq. 15.6.23. J. O. Andrews, D.S.O., M.C., to School of Technical Training (Men), Manston. 1.8.23. J. C. Brooke, D.S.C., to Marine and Armament Experimental Estab., Isle of Grain. 1.8.23. D. Colyer, D.F.C., to No. 5 Flying Training School, Shotwick. 1.8.23. E. J. D. Townesend to Aeroplane Experimental Estab., Martlesham Heath. 1.8.23.

Flying Officers.—W. G. Pudney to No. 2 Flying Training School, Duxford. 9.7.23. W. E. Cowan to R.A.F. Depot. 4.7.23, on appointment to a Short Service Commission. J. Bradbury to No. 27 Squadron, India. 17.6.23. D. J. Hugh-Jones to No. 27 Squadron, India. 30.6.23. C. P. Wingfield to No. 7 Sqdn., Bircham Newton. 9.7.23. L. S. Ingle (Hon. Flt. Lieut.), M.C., and H. B. Holdway, both to R.A.F. Depot. 9.7.23, on secondment from the Army, on appointment to Temporary Commissions. R. E. B. Rose to R.A.F. Depot. 9.7.23, on appointment to a Short Service Commission.

IN PARLIAMENT**Rudder Control for Aircraft**

MR. OLIVER on July 16 asked the Secretary of State for Air the date on which the rudder control of aircraft was introduced; whether this country was the first to introduce this control; and, if so, who was the person who submitted the idea?

Sir S. Hoare: I am unable to give the information asked for in the first part of the question, except to say that the rudder as a means of controlling the direction of flight appears to have been an integral part of most of the designs put forward by inventors long before the advent of the practical flying machine. The earliest practical application of rudder control to aircraft, both dirigible balloons and flying machines, appears to have been made in foreign countries, namely, France, Germany, and the United States of America. The answer to the second part of the question is therefore in the negative, and the third part does not arise.

R.A.F. Flying Boats

MR. COMMANDER KENWORTHY on July 19 asked the Secretary of State for Air how many large-type flying boats of modern design are available for the service of the Royal Navy in home waters; how many in the Mediterranean and East Indies, respectively; whether any arrangements are in existence for towing these large flying boats in special towing lighters; and how many pilots trained in flying this type of craft are on the active list?

Lieut.-Col. Sir Samuel Hoare: In answer to the first part of the question, the number of large-type flying boats actually in commission and available for service with the Navy is 10 in home waters. As regards the Mediterranean, five flying boats have been maintained, but are now being replaced by float planes by agreement with the Admiralty. None are in use in the East Indies. The desirability of their provision will be considered in connection with the formation of the base at Singapore, but the present policy is to concentrate on experimental types and to avoid large expenditure on types which may soon be superseded in design. No arrangements are at present made for special towing lighters, but there is a floating dock which can be towed and will accommodate two of the largest flying boats. The number of pilots trained to fly this type of aircraft is not recorded separately from those flying other similar types, but they considerably exceed the number of boats in commission.

Brennan Helicopter

MR. ROSE asked the amount of public money already spent upon the Brennan Helicopter at Farnborough and the time the experiments have taken;

World's Records and French Encouragement

AMERICA having taken over certain aviation records, France is evidently not inclined to stand tamely by without an effort to recapture them. M. Laurent-Eynac, Under-Secretary of State for Air, announces the allocation of two prizes of 50,000 francs each to go to the constructors of the first French machine or machines which by January 1, 1924, improve the speed and the height records respectively. There

Miss F. L. White; Dec. 1, 1922. Miss A. F. Acheson; Dec. 13, 1922. Miss M. H. Adamson; Dec. 14, 1922. Miss E. M. Featherby; Dec. 15, 1922. Miss K. M. Beall, Miss J. K. A. Browne, Miss E. W. Hunter, Miss K. I. Sweeney, and Miss C. M. Youngson; Dec. 16, 1922.

Reserve of Air Force Officers

Class A.—The following are granted commissions on probation in ranks stated in General Duties Branch (July 17):—Flying Officer D. A. Hughes. Pilot Officers.—C. W. Daggett, R. A. Jacquot.

Memorandum

The permission granted to Sec. Lieut. A. Lindsay to retain his rank is withdrawn on his enlistment in the Territorial Army.

London Gazette, July 20, 1923

Group Capt. C. L. N. Newall, C.M.G., C.B.E., A.M., has been appointed Air Aide-de-Camp to the King; June 30, vice Air Commodore E. R. Ludlow-Hewitt, C.M.G., D.S.O., M.C.

Stores Branch

Flying Offr. J. W. Gray is cashiered by sentence of General Court Martial; July 7.

Pilot Officers.—J. J. Comerford to R.A.F. Base, Leuchars (No. 403 Flight 17.7.23. W. T. D. Windham to R.A.F. Depot (Non-effective Pool). 1.7.23. Y. W. Burnett, J. Catz, J. S. Dick, A. G. Everett and S. R. Sunnucks, all to R.A.F. Depot. 9.7.23, on appointment to Short Service Commissions.

Stores Branch

Squadron Leader W. J. Waddington, O.B.E., to Headquarters, Inland Area, Uxbridge. 17.7.23.

Flying Officers.—A. J. Cox, M.B.E., to C. and M. Party, Hawkinge. 2.7.23. H. J. Young, M.B.E., to Headquarters, R.A.F., Cranwell. 2.7.23. A. J. Redman, D.F.C., to C. and M. Party, Digby. 2.7.23. L. J. V. Bates to R.A.F. Base, Calshot. 2.7.23. R. Lamb to No. 4 Stores Depot, Ruislip. 2.7.23.

Pilot Officers.—J. H. P. Clarke to No. 4 Stores Depot, Ruislip. 2.7.23. F. C. B. Hichens to No. 3 Stores Depot, Milton. 2.7.23. N. W. Law to R.A.F. Depot. 2.7.23.

Medical Branch

Squadron Leader H. A. Hewat, M.B., D.T.M., to Basrah Combined Hospital. 8.6.23.

Flight Lieutenants.—J. R. Crollius, M.B., to Jenin Combined Hospital, Palestine. 6.6.23. T. M. Walker to Detention Hospital, Jerusalem. 4.6.23. J. A. Quin, M.D., B.A., to No. 7 Squadron, Bircham Newton. 5.7.23, instead of to C. and M. Party, Bircham Newton, as previously notified. H. H. R. Bayley to Armament and Gunnery School, Eastchurch. 6.7.23. H. E. Flavelle (Dental) to R.A.F. Depot. 27.7.23.

and if the progress made justifies, in the opinion of his experts, any further expenditure upon this type of vertical flight machine?

Sir S. Hoare: The work in connection with the Brennan helicopter, which had previously been carried out under the Ministry of Munitions, was transferred to the Royal Aircraft Establishment, Farnborough, in June, 1919, from which date until the 8th instant the expenditure, inclusive of salaries, wages, materials and costs, has amounted to approximately £41,000. The answer to the latter part of the question is in the affirmative.

Mr. Rose: In view of the very extended period and the great amount of money involved in these experiments, has the right hon. gentleman considered the propriety of invoking the aid of that eminent engineering specialist, Mr. W. Heath Robinson, to see if he cannot do something a little bit cheaper?

Sir S. Hoare: It is very difficult, with these complicated experiments, to know how long they will take, but I think, on the whole, in view of the point at which these experiments have arrived, it would be a pity to end them now.

Major Paget: Is not an enormous amount of knowledge obtained from failures in experiments, as well as from successes?

R.A.F. Strength

CAPT. W. BENN asked, under the new British programme when complete, what will be the total strength of the British Air Force in the following branches: Home defence force, co-operation with the Army, co-operation with the Navy, force in Constantinople, force in Egypt and Palestine, force in Iraq, and force in India?

Sir S. Hoare: The new programme provides for a total allotment on its completion of 52 squadrons for home defence. As regards the allocation of squadrons for the other purposes specified in the question, it is not practicable to anticipate what changes in distribution are likely to be required before the new home defence programme is completed, but the service squadrons provided in the present year's Estimates comprise (in addition to home defence squadrons) eight squadrons for the Navy; two for Army co-operation; eight in Iraq; six in India; four in Egypt and Palestine, and three squadrons in reserve and for communications. These numbers include four squadrons which have been temporarily diverted to Constantinople from their normal stations. I must, however, add that the question of the Air Force co-operating with the Navy and the Army is still under the consideration of the National Defence Committee of the Committee of Imperial Defence, and that the figures that I have given must be subject to the decision of the Cabinet in connection with the Committee's Report.

are some things in France we might well pay them the compliment of copying this side the Channel. Yet with the rapidly approaching date for the Schneider Cup we are content to let this trophy, from sheer official apathy, slip through our fingers and go—probably—across the herring-pond to the U.S. Government competing machines. Truly Britain, since the War, is a land for sportsmen to live in!

Schneider Cup

At present no British entries are tabled for this event. The Americans, at least, are leaving nothing to chance and every effort possible will be made to lift the Cup. They are sending over four machines, from which to select the final three to represent the United States. The pilots will be Lieut. Frank Wead, who is in charge, Lieut. A. W. Gorton, Lieut. Rutledge Irvine, and Lieut. Rittenhouse. The machines are due to arrive in this country on August 25, and they will have a full month's practice on the course. Arrangements have been made to house the machines at Saunders' of Cowes.

A Salute to the R.A.F. Memorial

"FROM a high window back of the Strand—the same from which one of the fighting men it commemorates used to watch the London skies—I saw this morning the aeroplanes saluting the R.A.F. memorial.

"They came singly, skimming low over the huddled roofs and sometimes tilting till the sun flashed them into silver.

"Over the river they dipped out of sight in their journey of homage, and then rose, wheeled round the Victoria tower and soared out of sight again into a pearly sky—a moving and beautiful little ceremony to those who were privileged to see it."—A Londoner's Dairy."

Our Airship Scheme

SPEAKING at the annual meeting of the Air League of the British Empire, at which he presided on the 18th inst., the Duke of Sutherland, Under Secretary for Air, in the course of his remarks said: "I am hopeful of a decision being taken very shortly on the big airship scheme which is before the Imperial Defence Committee of the Cabinet. I believe the scheme will turn out a very far-reaching one, both as a means of linking up our Empire and making the Far East our eventual goal. We shall gradually move by stages in that direction, first possibly to Egypt, then to India—perhaps in 72 hours—and then on round the world."

Another Around-the-World-Flight Attempt

THE annual report of the Air League of the British Empire announces that an attempt to fly round the world is shortly to be made by three distinguished flying officers, Capt. E. J. K. McClaughry, Capt. F. Tymes, and Mr. R. H. McIntosh. This flight, it states, is highly thought of by the Civil Aviation Department of the Air Ministry, who are giving practical effect in many ways to their appreciation of its chance of success.

Second Trans-American Flight Fails

ON July 19 Lieut. R. L. Maughn started on a second attempt at a dawn-to-dusk flight across the United States. Leaving New York at 4.8 a.m. (Eastern time) on a Curtiss-Persuit biplane, he was forced to land at Cheyenne, Wyoming, owing to engine trouble. Proceeding, he covered another 240 miles before he was again forced to land at Rocksprings, when he had to abandon the attempt. He had then flown 1,922 miles in 15 hours, and only had another 700 odd miles to cover.

A Portuguese Around-the-World Flight

CAGO COUTINHO and Saccadura Cabral, who last year flew from Lisbon to Rio de Janeiro, are, it is reported, to make an attempt to fly round the world. The journey will be divided into three sections: Lisbon-Japan, Japan-Newfoundland, and Newfoundland-Lisbon. The scheme is being financed by the Portuguese Government, and Brazil has been invited to participate.

Munich-Budapest Air Line

THE daily air service between Munich and Vienna has now been extended to Budapest, the initial flight over the whole section being carried out on July 16 last. On this occasion the first stage, Munich-Vienna (by aeroplane) took 1 hour 40 mins., the second stage, Vienna-Budapest (by seaplane along the Donau river) taking 1 hour 20 mins., or a total of 3 hours.

An Enterprising Corporation

It is refreshing to note that the Gloucestershire Corporation are thoroughly up to date, and seemingly alive to the important position aviation holds, or should hold, today. As will be seen from an announcement elsewhere in this issue, the Corporation invite tenders for the right to give aeroplane flights on the occasion of the City of Gloucester Barton Fair and Mops, which takes place from September 27 to October 14 next. Probably this enterprising spirit is due to the inspiring influence of the Gloucestershire "Bamel"?

SOCIETY OF MODEL AERONAUTICAL ENGINEERS (London Aero Models Association)

On Friday, July 20, Mr. Kingston brought to Headquarters a new glider of very original design, the trials of which will be awaited with interest.

Saturday, July 21, was appointed as a day for attempting to break records at Sudbury. The object of the meeting was not achieved, but some good flights were made.

August 1 is the closing date for the first session of the Photographic Competition. Entries should be sent to the Competition Secretary, Mr. C. Bayard Turner, 21, Lanercost Road, Tulse Hill, S.W. 2, as soon as possible. It is pointed out that this competition is open to all—viz., members and non-members.

On Friday, August 3, at Headquarters, 20, Great Windmill Street, Piccadilly, W. 1, Mr. C. Bayard Turner will read before the members a translation of a paper on "Tests with Rubber Motors," by Mr. Michielsen of the Hague Aero Club.

A. E. JONES, Hon. Sec.

PUBLICATIONS RECEIVED.

U.S. Department of Commerce. Circular of the Bureau of Standards, No. 138. A Decimal Classification of Radio Subjects—An Extension of the Dewey System. March 21, 1923. Government Printing Office, Washington, D.C., U.S.A.

Report on the Economic, Financial and Industrial Conditions of Finland, March, 1923. By C. H. Mackie. Price 2s. 1d. post free. London: H.M. Stationery Office, Kingsway, W.C.

Revue Juridique Internationale de la Locomotion Aérienne. June, 1923. Edition Aérienne, 4, Rue Tronchet, Paris.

Scientific Papers of the U.S. Bureau of Standards: No. 469. Directive Radio Transmission on a Wave Length of 10 Meters. By F. W. Dunmore and F. H. Engel. April 11, 1923. U.S. Government Printing Office, Washington, D.C., U.S.A. Price 10 cents.

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: cyl. = cylinder; I.C. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

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